

**Calendar No. 439**

115TH CONGRESS }  
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SENATE

{ REPORT  
115-262 }

**THE JOHN S. McCAIN NATIONAL DE-  
FENSE AUTHORIZATION ACT FOR FIS-  
CAL YEAR 2019**

**R E P O R T**

[TO ACCOMPANY S. 2987]

ON

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2019 FOR  
MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE AND  
FOR MILITARY CONSTRUCTION, TO PRESCRIBE MILITARY PER-  
SONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER  
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## CONTENTS

Purpose of the Bill .....	1
Committee Overview .....	2
Preamble to the John S. McCain National Defense Authorization Act for Fiscal Year 2019 .....	3
Summary of Discretionary Authorizations and Budget Authority Implication ..	6
Budgetary Effects of This Act (Sec. 4) .....	6
DIVISION A—Department of Defense Authorizations .....	7
TITLE I—PROCUREMENT .....	7
Subtitle A—Authorization of Appropriations .....	7
Authorization of appropriations (sec. 101) .....	7
Subtitle B—Army Programs .....	7
Deployment by the Army of an interim cruise missile defense capa- bility (sec. 111) .....	7
Subtitle C—Navy Programs .....	8
Multiyear procurement authority for F/A–18E/F Super Hornet and EA–18G aircraft program (sec. 121) .....	8
Multiyear procurement authority for E–2D Advanced Hawkeye (AHE) aircraft program (sec. 122) .....	8
Extension of limitation on use of sole-source shipbuilding contracts for certain vessels (sec. 123) .....	8
Prohibition on availability of funds for Navy port waterborne security barriers (sec. 124) .....	9
Multiyear procurement authority for Standard Missile-6 (sec. 125) .....	9
Limitation on availability of funds for the Littoral Combat Ship (sec. 126) .....	10
Nuclear refueling of aircraft carriers (sec. 127) .....	10
Limitation on funding for Amphibious Assault Vehicle Product Im- provement Program (sec. 128) .....	10
Subtitle D—Air Force Programs .....	11
Prohibition on availability of funds for retirement of E–8 JSTARS aircraft (sec. 141) .....	11
B–52H aircraft system modernization report (sec. 142) .....	11
Repeal of funding restriction for EC–130H Compass Call Recapital- ization Program and review of program acceleration opportunities (sec. 143) .....	12
Subtitle E—Defense-Wide, Joint, and Multiservice Matters .....	12
Multiyear procurement authority for C–130J aircraft program (sec. 151) .....	12
Quarterly updates on the F–35 Joint Strike Fighter program (sec. 152) .....	12
Authority to procure additional polar-class icebreakers (sec. 153) .....	14
Budget Items .....	14
Army .....	14
Interim cruise missile defense capability for the Army .....	14
Army Tactical Missile System .....	14
Armored Multi-Purpose Vehicle .....	14
Stryker modification .....	15
Stryker upgrade .....	15
Bradley Program (Modifications) .....	15
Paladin Integrated Management .....	15
Small caliber reduction .....	15
Army ammunition reduction .....	15
Joint Light Tactical Vehicle .....	16
U.S. Southern Command unfunded priorities increase .....	16
Army automated data processing equipment .....	16

IV

TITLE I—PROCUREMENT —Continued  
Budget Items —Continued

	Page
Navy .....	17
F-35C Joint Strike Fighter .....	17
E-2D Advanced Hawkeye .....	17
USMC OA-X light attack procurement .....	17
C-40 aircraft .....	18
USMC Medium-Altitude Long-Endurance Unmanned Aircraft System procurement .....	19
EA-18G cognitive electronic warfare .....	19
Adaptive Radar Countermeasure .....	20
F-35B modifications .....	20
F-35C modifications .....	20
F-35 spares and repair parts .....	21
Sidewinder .....	21
Long range anti-ship missile .....	22
Harpoon block II .....	22
Advanced Anti-Radiation Guided Missile .....	22
MK48 torpedoes .....	23
LCS module weapons .....	23
Advanced low-cost munitions ordnance .....	23
Virginia-class submarine advance procurement .....	23
DDG-1000 .....	24
Arleigh Burke-class destroyers .....	24
Arleigh Burke-class destroyer advance procurement .....	24
Littoral Combat Ship .....	25
LPD-class amphibious transport ship advance procurement .....	25
Outfitting .....	25
Service craft .....	26
Completion of prior year shipbuilding programs .....	27
Cable ship .....	27
Other navigation equipment .....	27
DDG-1000 class support equipment .....	27
Items less than \$5 million .....	28
LCS mine countermeasures mission modules .....	28
LCS anti-submarine warfare mission modules .....	28
LCS surface warfare mission modules .....	28
Surface ship torpedo defense .....	29
Cooperative Engagement Capability .....	29
Minesweeping system replacement .....	29
Shallow water mine countermeasures .....	29
Next Generation Surface Search Radar .....	30
Cryptologic communications equipment .....	30
Sonobuoys .....	30
Navy port waterborne security barriers .....	31
Amphibious Assault Vehicle Survivability Upgrade .....	31
Command post systems .....	31
Training devices .....	32
Air Force .....	32
F-35A Joint Strike Fighter .....	32
OA-X light attack aircraft .....	32
KC-46A Pegasus .....	33
MQ-9 .....	34
B-52 .....	34
Long range anti-ship missile certification on the B-52 .....	34
A-10 replacement wing program .....	34
F-35A modifications .....	35
C-130 propulsion upgrade .....	35
Joint Surveillance Target Attack Radar System .....	35
F-35A spares and repair parts .....	36
Air Force long range anti-ship missile .....	36
Small Diameter Bomb II .....	37
Cargo and utility vehicles .....	37
Security and tactical vehicles .....	38
Special purpose vehicles .....	38
Fire fighting/crash rescue vehicles .....	38
Materials handling vehicles .....	38

	Page
TITLE I—PROCUREMENT —Continued	
Budget Items —Continued	
Air Force—Continued	
Runway snow removal and cleaning equipment .....	39
Air Force physical security system .....	39
Base maintenance and support equipment .....	39
Defense Wide .....	39
Joint Service Provider .....	39
Items of Special Interest .....	39
Aircraft carrier acquisition .....	39
Army M4 Carbine Forward Extended Rails .....	40
Avoiding future work stoppages on EC-130H Compass Call Recapitalization .....	40
B-2 modernization programs .....	41
B-52 re-engining .....	41
Briefing on tactical wheeled vehicle acquisition plans .....	42
CH-53K Heavy Lift Replacement .....	42
Continued F-15 C/D fleet modernization .....	43
Explosive Ordnance Disposal technology development .....	43
F-35 modifications to Block 4 configuration .....	43
Ford-class sustainment and product support .....	44
Guided missile frigate (FFG(X)) .....	44
HH-60 Combat Rescue Helicopter program .....	45
Immersive virtual shipboard environment training .....	45
Intermediary Low-Cost Tactical Extended Range Missile .....	45
John Lewis-class fleet oiler multiyear procurement strategy .....	46
Light-weight polymer technologies for ammunition and small arms ..	46
Maneuver Short Range Air Defense to counter Unmanned Aircraft Systems .....	47
Navy equipment for the Heavy Polar Icebreaker program .....	47
Navy small arms weapons training .....	47
Preservation of F-117 aircraft with certified combat sorties .....	48
Presidential protection .....	48
Report on Air Force plan for fighter aircraft .....	49
Report on Navy's current and future state of long range strike capability .....	49
Rifle Marksmanship Training .....	49
San Antonio-class Flight II amphibious transport ship multiyear procurement strategy .....	50
Small Unit Support Vehicle report .....	50
Stryker A1 Production .....	51
Swarm attack defense of Navy ships .....	51
TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION .....	53
Subtitle A—Authorization of Appropriations .....	53
Authorization of appropriations (sec. 201) .....	53
Subtitle B—Program Requirements, Restrictions, and Limitations .....	53
Codification and reauthorization of Defense Research and Development Rapid Innovation Program (sec. 211) .....	53
Procedures for rapid reaction to emerging technology (sec. 212) .....	53
Activities on identification and development of enhanced personal protective equipment against blast injury (sec. 213) .....	54
Human factors modeling and simulation activities (sec. 214) .....	54
Expansion of mission areas supported by mechanisms for expedited access to technical talent and expertise at academic institutions (sec. 215) .....	55
Advanced manufacturing activities (sec. 216) .....	56
National security innovation activities (sec. 217) .....	56
Partnership intermediaries for promotion of defense research and education (sec. 218) .....	57
Limitation on use of funds for Surface Navy Laser Weapon System (sec. 219) .....	57
Expansion of coordination requirement for support for national security innovation and entrepreneurial education (sec. 220) .....	58
Limitation on funding for Amphibious Combat Vehicle 1.2 (sec. 221) ..	58
Defense quantum information science and technology research and development program (sec. 222) .....	58
Joint directed energy test activities (sec. 223) .....	59

	Page
TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION —	
Continued	
Subtitle B—Program Requirements, Restrictions, and Limitations —Con-	
tinued	
Requirement for establishment of arrangements for expedited access	
to technical talent and expertise at academic institutions to sup-	
port Department of Defense missions (sec. 224) .....	60
Authority for Joint Directed Energy Transition Office to conduct	
research relating to high powered microwave capabilities (sec. 225)	60
Joint artificial intelligence research, development, and transition ac-	
tivities (sec. 226) .....	60
Subtitle C—Reports and Other Matters .....	60
Report on comparative capabilities of adversaries in key technology	
areas (sec. 231) .....	60
Report on active protection systems for armored combat and tactical	
vehicles (sec. 232) .....	61
Next Generation Combat Vehicle (sec. 233) .....	61
Report on the future of the defense research and engineering enter-	
prise (sec. 234) .....	62
Modification of reports on mechanisms to provide funds to defense	
laboratories for research and development of technologies for mili-	
tary missions (sec. 235) .....	63
Report on Mobile Protected Firepower and Future Vertical Lift (sec.	
236) .....	63
Improvement of the Air Force supply chain (sec. 237) .....	63
Review of guidance on blast exposure during training (sec. 238) .....	64
List of technologies and manufacturing capabilities critical to Armed	
Forces (sec. 239) .....	64
Report on requiring access to digital technical data in future acquisi-	
tions of combat, combat service, and combat support systems (sec.	
240) .....	65
Competitive acquisition strategy for Bradley Fighting Vehicle trans-	
mission replacement (sec. 241) .....	65
Independent assessment of electronic warfare plans and programs	
(sec. 242) .....	65
Budget Items .....	66
Army .....	66
Army defense research sciences .....	66
Army quantum information sciences .....	66
University and industry research centers .....	66
Sensors and electronic survivability .....	67
Aviation technology .....	67
Weapons and munitions technology .....	67
Human factors engineering technology .....	68
Command, Control, and Communications technology .....	68
Aviation advanced technology .....	69
Extended Range Cannon Artillery gun .....	69
Combat vehicle and automotive advanced technology .....	69
Army Next Generation Combat Vehicle Prototype .....	69
High performance computing modernization program .....	70
Research, Development, Test, and Evaluation funds for minor	
Science and Technology military construction .....	70
Military engineering advanced technology .....	71
Position, navigation and timing technology .....	71
Command, Control, and Communication advanced technology .....	71
Anti-Personnel Improved Conventional Munition .....	72
Tactical Exploitation of National Capabilities Radio Frequency	
Exploitation—Electronic Intelligence .....	72
Indirect Fire Protection Capability .....	73
Mobile Protected Firepower .....	73
Suite of Vehicle Protection Systems—EMD (Vehicle Protection	
Suite Project) .....	73
Army contract writing system .....	74
Major T&E investment .....	74
High energy laser testing .....	74
Navy .....	75
Navy basic research initiatives .....	75

VII

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION —		Page
Continued		
Budget Items —Continued		
Navy —Continued		
Navy defense research sciences .....		75
Navy quantum information sciences .....		75
Directed energy applied research .....		75
Warfighter sustainment applied research .....		76
Undersea warfare applied research .....		76
Innovative Naval prototypes—applied research .....		76
USMC advanced technology demonstration .....		76
Innovative Naval prototypes—advanced technology development .		77
Advanced combat systems technology .....		77
Surface and shallow water mine countermeasures .....		77
Advanced submarine system development .....		78
Common Hull Auxiliary Multi-mission Platform acceleration .....		78
Littoral Combat Ship mission modules .....		78
Land attack technology .....		79
F/A-18 infrared search and track .....		79
Small and medium unmanned undersea vehicles .....		79
Large unmanned undersea vehicles .....		80
Littoral airborne mine countermeasures .....		80
Surface mine countermeasures .....		80
AV-8B Aircraft—Engineering Development .....		80
Physiological episode safety improvements .....		81
EA-18G cognitive electronic warfare .....		81
EA-18G offensive airborne electronic attack special mission pod .		82
LPD-17 class systems integration .....		82
SM-6 Block 1B 21 inch rocket motor .....		82
Amphibious assault ship acceleration .....		82
Electronic Procurement System .....		83
Navy Information Technology Systems Development .....		83
Management, technical, and international support .....		83
Maritime Strike Tomahawk .....		84
Integrated surveillance system .....		84
Advanced Anti-Radiation Guided Missile extended range .....		84
Tactical Targeting Network Technology .....		85
F/A-18 E/F engine enhancements .....		85
Amphibious Assault Vehicle .....		85
Air Force .....		86
Air Force defense research sciences .....		86
Air Force quantum information sciences .....		86
High energy laser research initiatives .....		86
Materials .....		86
Aerospace vehicle technologies .....		87
Affordable responsive modular rocket .....		87
Multi-mode propulsion applied research .....		87
Solid Rocket Motor Produce On-Demand .....		88
Aerospace propulsion .....		88
Aerospace sensors .....		88
Skywave Technologies Laboratory .....		88
High energy laser research .....		89
High powered microwave research .....		89
Advanced materials for research .....		89
Materials affordability .....		89
Sustainment in science and technology .....		90
Aerospace technology development and demonstration increase for operational energy capability improvements .....		90
Aerospace propulsion and power technology .....		90
Multi-mode propulsion advanced technology development .....		91
Technology for the sustainment of strategic systems .....		91
Electronic combat technology .....		91
Demonstrator Laser Weapons System .....		92
Prototype Tanker .....		92
Hypersonic Conventional Strike Weapon .....		92
Technology transition program .....		93
Air Force supply chain innovation .....		93

VIII

	Page
TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION —	
Continued	
Budget Items —Continued	
Air Force—Continued	
Contracting Information Technology System .....	93
Advanced Battle Management System .....	94
JSTARS recap radar .....	94
Major Test and Evaluation Management .....	94
Air Force Integrated Personnel and Pay System .....	94
B-52 .....	95
Airborne Early Warning and Control System .....	95
Maintenance, Repair, and Overhaul System .....	95
Defense Enterprise Accounting Management System Increment	
2 .....	96
Defense Wide .....	96
Defense Advanced Research Projects Agency defense research	
sciences .....	96
Critical materials .....	96
Defense-wide quantum information sciences .....	97
Basic research initiatives .....	97
Activities to determine more effective personal protective equip-	
ment against blast injury .....	97
Joint munitions program .....	97
Applied research for the advancement of science and technology	
priorities .....	98
Tactical technology .....	98
Multi-Azimuth Defense Fast Intercept Round Engagement Sys-	
tem .....	98
Materials and biological technology .....	99
Combating terrorism technology support .....	99
Advanced aerospace systems .....	99
Blackjack .....	100
Defense Innovation Unit Experimental .....	100
Networked communications capabilities .....	100
Enhancing cybersecurity for small vendors .....	100
Defense-wide manufacturing science and technology program .....	101
Defense Logistics Agency manufacturing technology program .....	101
Defense Logistics Agency generic logistics research and develop-	
ment technology demonstrations .....	101
Strategic Environmental Research and Development Program	
and Environmental Security Technology Certification Program	
increases .....	102
Microelectronics technology development and support .....	103
Advanced electronics technologies .....	103
Network-centric warfare technology .....	103
Sensor technology .....	103
Quick reaction special projects .....	104
Test and evaluation science and technology related to	
hypersonics and directed energy .....	104
Test and evaluation science and technology workforce develop-	
ment .....	104
Operational energy capability improvement .....	104
National Security Innovation Activities .....	105
Corrosion control and prevention funding increase .....	105
Trusted and assured microelectronics .....	105
Defense Contract Management Agency information technology	
development .....	106
Deputy Chief Management Officer policy and integration .....	106
Defense-wide electronic procurement capabilities .....	106
Trusted and assured microelectronics engineering and manufac-	
turing development .....	107
Hypersonic experimentation facilities .....	107
Joint mission environment test capability .....	107
Technical studies, support and analysis .....	108
Developmental Test and Evaluation .....	108
Policy research and development programs .....	108
Personnel security and continuous evaluation innovation .....	108

	Page
TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION — Continued	
Budget Items —Continued	
Defense Wide—Continued	
Director, Operational Test and Evaluation cyber projects .....	109
Items of Special Interest .....	109
AC-130J High Energy Laser .....	109
Acoustic Threat Detection .....	109
Active Protection System for Abrams, Bradley, Stryker .....	110
Additive manufacturing within the military departments .....	110
Advanced countermeasure dispenser system for 4th generation/legacy aircraft .....	111
Advanced hull technology .....	111
Advanced low-weight body armor report .....	111
Aerospace sensors .....	111
Airless Tire Technology Demonstration .....	112
Army Assured Mobility in Northern Regions .....	112
Combat Vehicle Light Weight Development Program .....	112
Comptroller General review of Department of Defense industry Inde- pendent Research and Development funding .....	113
Defense Advanced Research Projects Agency Gremlins Air-Recover- able Unmanned Aerial Vehicle System .....	114
Department of Defense Laboratory talent management and succes- sion planning .....	114
Diamond transistor technology for power conversion in combat infra- structure .....	114
Fielding of radiation detection devices .....	114
Hyper Velocity Projectile .....	115
Improved Turbine Engine Program .....	115
Land-Bases Anti-Ship Missile .....	116
Military applications for Graphene .....	116
Modernizing Towed 105 Artillery Systems .....	116
Next Generation Health Monitoring System (NGHMS) .....	117
Policy issues surrounding emerging technologies for combat and non- combat use .....	117
Rapid-charging hybrid energy storage fuel cells .....	118
Report on Metal Matrix Composites for Army Vehicles .....	118
Research, development, and procurement of wearable and mobile remote power capabilities .....	118
Soldier Born Sensor (SBS) Program .....	118
Surrogates for operational testing of torpedoes and torpedo defensive systems .....	119
Technology and transition accelerators .....	119
Trusted and assured microelectronics .....	119
Ultra Low Power Deployable Radar .....	120
Ultra-Lightweight Camouflage Net System .....	120
Workforce and infrastructure for National Defense Strategy priority technologies .....	120
TITLE III—OPERATION AND MAINTENANCE .....	123
Subtitle A—Authorization of Appropriations .....	123
Authorization of appropriations (sec. 301) .....	123
Subtitle B—Energy and Environment .....	123
Further improvements to energy security and resilience (sec. 311) .....	123
Funding of study and assessment of health implications of per- and polyfluoroalkyl substances contamination in drinking water by Agency for Toxic Substances and Disease Registry (sec. 312) .....	123
Military Mission Sustainment Siting Clearinghouse (sec. 313) .....	123
Operational energy policy (sec. 314) .....	123
Funding treatment of perfluorooctane sulfonic acid and perfluorooctanoic acid at State-owned and operated National Guard installations (sec. 315) .....	124
Subtitle C—Reports .....	124
Reports on readiness (sec. 321) .....	124
Report on cold weather capabilities and readiness of United States Armed Forces (sec. 322) .....	124
Subtitle D—Other Matters .....	124

	Page
TITLE III—OPERATION AND MAINTENANCE—Continued	
Subtitle D—Other Matters —Continued	
Pilot programs on integration of military information support and civil affairs activities (sec. 331) .....	124
Reporting on future years budgeting by subactivity group (sec. 332) ...	125
Restriction on upgrades to aviation demonstration team aircraft (sec. 333) .....	125
U.S. Special Operations Command civilian personnel (sec. 334) .....	125
Limitation on availability of funds for service-specific Defense Readiness Reporting Systems (sec. 335) .....	126
Repurposing and reuse of surplus Army firearms (sec. 336) .....	126
Limitation on availability of funds for establishment of additional specialized undergraduate pilot training facility (sec. 337) .....	126
Scope of authority for restoration of land due to mishap (sec. 338) .....	127
Redesignation of the Utah Test and Training Range (UTTR) (sec. 339) .....	127
Subtitle E—Logistics and Sustainment .....	127
Limitation on modifications to Navy Facilities Sustainment, Restoration, and Modernization (FSRM) structure and mechanism (sec. 351) .....	127
Budget Items .....	127
United States Southern Command unfunded priorities increase .....	127
Army marketing and advertising reduction .....	127
Army Operation and Maintenance budget request for civilian pay .....	128
United States Southern Command unfunded priorities increase for sensor integration .....	128
Enterprise information reduction .....	128
Navy facilities, sustainment, restoration, and modernization increase .....	128
F-35 depot component repair capability .....	129
Air Force demolition increases .....	129
Joint Surveillance Target Attack Radar System weapons system sustainment .....	129
Air Force weapon system sustainment increases .....	130
Joint Surveillance Target Attack Radar System flight hours .....	130
Deployable airbase systems .....	130
Joint Surveillance Target Attack Radar System personnel .....	131
Air National Guard increase per- and polyfluoroalkyl substance environmental restoration funding transfer .....	131
Plan for incorporating logistics sustainment under attack into war games .....	132
Defense Security Service .....	132
Personnel security background investigations .....	133
Funding for impact aid .....	133
Center for Disease Control study increase .....	133
Department of Defense Siting Clearinghouse increase .....	134
Defense Environmental International Cooperation program increase ..	134
Department of Defense emerging contaminants increase .....	134
Department of Defense environmental resiliency increase .....	135
Department of Defense rewards program reduction .....	135
Readiness and Environmental Protection Initiative .....	135
Air Force decrease per- and polyfluoroalkyl substance environmental restoration funding transfer .....	136
Foreign currency fluctuations .....	136
Junior Reserve Officers' Training Corps increase .....	136
Air Force Per- and Polyfluoroalkyl substances cleanup .....	136
Air National Guard Per- and Polyfluoroalkyl substances cleanup .....	137
Army Per- and Polyfluoroalkyl substances cleanup .....	137
Navy Per- and Polyfluoroalkyl substances cleanup .....	137
Items of Special Interest .....	137
Air Force runway infrastructure .....	137
All services marketing audit .....	138
Ammunition plant reform and stockpile of explosives .....	138
Arctic search and rescue .....	139
Assessment of assigning a Security Force Assistance Brigade to U.S. Africa Command .....	140
Assessment of Department of Defense installation management .....	140
Assessment of hybrid electric drive performance .....	142

	Page
TITLE III—OPERATION AND MAINTENANCE—Continued	
Items of Special Interest —Continued	
Battery storage and safety programs clarification .....	142
Battery storage technology .....	143
Briefing on Agency for Toxic Substances and Disease Registry PFAS report .....	143
Building energy resilience on military installations .....	143
Comptroller General review of Defense-wide Working Capital Fund overhead charges and fees .....	144
Congressional notification of incidents .....	144
Corrosion prevention and oversight .....	145
Cost benefit analysis of alternative-fueled vehicles and infrastruc- ture .....	146
Cost benefit analysis on conducting organic depot level maintenance on the joint surveillance target attack radar system .....	146
Depot best practices .....	147
Development of future fluorine-free fire fighting foams .....	148
Employment of Special Operations Forces .....	149
Encouraging the use of the Innovative Readiness Training program ..	149
Establishment of the energy resilience project development and im- plementation office .....	150
Establishment of the occupational group for federal energy managers ..	151
Guidance on utility privatization contracts .....	151
High purity aluminum .....	151
High-energy intensity report .....	152
High-pressure cold spray repair .....	152
Leveraging non-Department funds to address infrastructure mainte- nance backlogs and project delays .....	152
Light emitting diodes for aviation applications .....	153
M240 medium machine gun modernization .....	153
Maintaining current balance of government and private contractors under 10 U.S.C. 2466 .....	154
Marine Corps Base of the Future .....	155
Marine Corps Policy on flame-resistant uniforms .....	155
Military working dogs .....	156
Navy next generation small arms weapons training and readiness requirements .....	156
Operational energy technologies .....	157
Paint training programs .....	157
Predicting soil-terrain-atmospheric conditions .....	158
Privatization of stormwater conveyance systems .....	158
Report on transportation infrastructure critical to Eastern Range space operations .....	158
Report on universal camouflage inventory and use .....	159
Review of Department of Defense mission assurance program .....	160
Review of the Navy's shipyard improvement plan .....	161
Rough terrain container handler .....	162
Surface Deployment and Distribution Command common and logis- tics broker waiver process .....	163
Use of fire extinguishers in Department of Defense facilities and National Model Codes .....	163
Use of Global Combat Support System-Army by deployed units .....	163
Water resources for Department of Defense installations .....	164
TITLE IV—MILITARY PERSONNEL AUTHORIZATIONS .....	165
Subtitle A—Active Forces .....	165
End strengths for active forces (sec. 401) .....	165
End strengths for commissioned officers on active duty in certain grades (sec. 402) .....	166
Subtitle B—Reserve Forces .....	166
End strengths for Selected Reserve (sec. 411) .....	166
End strengths for Reserves on active duty in support of the reserves (sec. 412) .....	166
End strengths for military technicians (dual status) (sec. 413) .....	167
Maximum number of reserve personnel authorized to be on active duty for operational support (sec. 414) .....	167
Subtitle C—Authorization of Appropriations .....	167
Military personnel (sec. 421) .....	167

XII

	Page
TITLE IV—MILITARY PERSONNEL AUTHORIZATIONS —Continued	
Subtitle C—Authorization of Appropriations —Continued	
Limitation on use of funds for personnel in fiscal year 2019 in excess of statutorily specified end strengths for fiscal year 2018 (sec. 422) .....	168
Budget Items .....	168
Military personnel funding changes .....	168
TITLE V—MILITARY PERSONNEL POLICY .....	169
Subtitle A—Officer Personnel Policy .....	169
Part I—Officer Personnel Management Reform .....	169
Modernizing officer personnel management in support of the National Defense Strategy .....	169
Repeal of codified specification of authorized strengths of certain commissioned officers on active duty (sec. 501) .....	172
Annual defense manpower requirements report matters (sec. 502) .....	172
Repeal of requirement for ability to complete 20 years of service by age 62 as qualification for original appointment as a regular commissioned officer (sec. 503) .....	173
Enhancement of availability of constructive service credit for private sector training or experience upon original appointment as a commissioned officer (sec. 504) .....	173
Standardized temporary promotion authority across the military departments for officers in certain grades with critical skills (sec. 505) .....	174
Authority for promotion boards to recommend officers of particular merit be placed higher on a promotion list (sec. 506) .....	175
Authority for officers to opt out of promotion board consideration (sec. 507) .....	176
Competitive category matters (sec. 508) .....	176
Promotion zone matters (sec. 509) .....	176
Alternative promotion authority for officers in designated competitive categories of officers (sec. 510) .....	177
Applicability to additional officer grades of authority for continuation on active duty of officers in certain military specialties and career tracks (sec. 511) .....	179
Part II—Other Matters .....	179
Matters relating to satisfactory service in grade for purposes of retirement grade of officers in highest grade of satisfactory service (sec. 516) .....	179
Reduction in number of years of active naval service required for permanent appointment as a limited duty officer (sec. 517) ..	180
Repeal of original appointment qualification requirement for warrant officers in the regular Army (sec. 518) .....	180
Uniform grade of service of the Chiefs of Chaplains of the Armed Forces (sec. 519) .....	180
Written justification for appointment of Chiefs of Chaplains in grade below grade of major general or rear admiral (sec. 520) ..	180
Subtitle B—Reserve Component Management .....	180
Authority to adjust effective date of promotion in the event of undue delay in extending Federal recognition of promotion (sec. 521) .....	180
Authority to designate certain reserve officers as not to be considered for selection for promotion (sec. 522) .....	180
Expansion of personnel subject to authority of the Chief of the National Guard Bureau in the execution of functions and missions of the National Guard Bureau (sec. 523) .....	181
Repeal of prohibition on service on Army Reserve Forces Policy Committee by members on active duty (sec. 524) .....	181
Subtitle C—General Service Authorities .....	181
Assessment of Navy standard workweek and related adjustments (sec. 531) .....	181
Manning of Forward Deployed Naval Forces (sec. 532) .....	182
Navy watchstander records (sec. 533) .....	182
Qualification experience requirements for certain Navy watchstations (sec. 534) .....	182
Repeal of 15-year statute of limitations on motions or requests for review of discharge or dismissal from the Armed Forces (sec. 535) ..	182

XIII

	Page
TITLE V—MILITARY PERSONNEL POLICY —Continued	
Subtitle C—General Service Authorities—Continued	
Treatment of claims relating to military sexual trauma in correction of military records and review of discharge or dismissal proceedings (sec. 536) .....	182
Subtitle D—Military Justice Matters .....	183
Punitive article on domestic violence under the Uniform Code of Military Justice (sec. 541) .....	183
Inclusion of strangulation and suffocation in conduct constituting aggravated assault for purposes of the Uniform Code of Military Justice (sec. 542) .....	183
Authorities of Defense Advisory Committee on Investigation, Prosecution, and Defense of Sexual Assault in the Armed Forces (sec. 543) .....	183
Protective orders against individuals subject to the Uniform Code of Military Justice (sec. 544) .....	183
Expansion of eligibility for Special Victims' Counsel services (sec. 545) .....	183
Clarification of expiration of term of appellate military judges of the United States Court of Military Commission Review (sec. 546) ..	183
Expansion of policies on expedited transfer of members of the Armed Forces who are victims of sexual assault (sec. 547) .....	184
Uniform command action form on disposition of unrestricted sexual assault cases involving members of the Armed Forces (sec. 548) .....	184
Inclusion of information on certain collateral conduct of victims of sexual assault in annual reports on sexual assault involving members of the Armed Forces (sec. 549) .....	184
Subtitle E—Member Education, Training, Transition, and Resilience .....	184
Consecutive service of service obligation in connection with payment of tuition for off-duty training or education for commissioned officers of the Armed Forces with any other service obligations (sec. 551) .....	184
Consecutive service of active service obligations for medical training with other service obligations for education or training (sec. 552) ....	184
Clarification of application and honorable service requirements under the Troops-to-Teachers Program to members of the Retired Reserve (sec. 553) .....	185
Prohibition on use of funds for attendance of enlisted personnel at senior level and intermediate level officer professional military education courses (sec. 554) .....	185
Repeal of program on encouragement of postseparation public and community service (sec. 555) .....	185
Expansion of authority to assist members in obtaining professional credentials (sec. 556) .....	185
Enhancement of authorities in connection with Junior Reserve Officers' Training Corps programs (sec. 557) .....	185
Subtitle F—Defense Dependents' Education and Military Family Readiness Matters .....	186
Part I—Defense Dependents' Education Matters .....	186
Continuation of authority to assist local educational agencies that benefit dependents of members of the Armed Forces and Department of Defense civilian employees (sec. 561) .....	186
Impact aid for children with severe disabilities (sec. 562) .....	186
Department of Defense Education Activity policies and procedures on sexual harassment of students of Activity schools (sec. 563) .....	186
Part II—Military Family Readiness Matters .....	187
Improvement of authority to conduct family support programs for immediate family members of the Armed Forces assigned to special operations forces (sec. 566) .....	187
Expansion of period of availability of Military OneSource program for retired and discharged members of the Armed Forces and their immediate families (sec. 567) .....	187
Expansion of authority for noncompetitive appointments of military spouses by Federal agencies (sec. 568) .....	187
Improvement of My Career Advancement Account program for military spouses (sec. 569) .....	187

XIV

	Page
TITLE V—MILITARY PERSONNEL POLICY —Continued	
Subtitle F—Defense Dependents' Education and Military Family Readiness Matters—Continued	
Part II—Military Family Readiness Matters—Continued	
Access to military installations for certain surviving spouses and other next of kin of members of the Armed Forces who die while on active duty or certain reserve duty (sec. 570) .....	188
Department of Defense Military Family Readiness Council matters (sec. 571) .....	188
Multidisciplinary teams for military installations on child abuse and other domestic violence (sec. 572) .....	188
Provisional or interim clearances to provide childcare services at military childcare centers (sec. 573) .....	189
Pilot program on prevention of child abuse and training on safe childcare practices among military families (sec. 574) .....	189
Pilot program on participation of military spouses in Transition Assistance Program activities (sec. 575) .....	190
Small business activities of military spouses on military installations in the United States (sec. 576) .....	190
Subtitle G—Decorations and Awards .....	190
Authorization for award of the Distinguished Service Cross for Justin T. Gallegos for acts of valor during Operation Enduring Freedom (sec. 581) .....	190
Award of medals or other commendations to handlers of military working dogs (sec. 582) .....	190
Subtitle H—Other Matters .....	190
Authority to award damaged personal protective equipment to members separating from the Armed Forces and veterans as mementos of military service (sec. 591) .....	190
Standardization of frequency of academy visits of the Air Force Academy Board of Visitors with academy visits of boards of other military service academies (sec. 592) .....	191
Redesignation of the Commandant of the United States Air Force Institute of Technology as President of the United States Air Force Institute of Technology (sec. 593) .....	191
Limitation on justifications entered by military recruiters for enlistment or accession of individuals into the Armed Forces (sec. 594) ...	191
National Commission on Military, National, and Public Service matters (sec. 595) .....	191
Burial of unclaimed remains of inmates at the United States Disciplinary Barracks Cemetery, Fort Leavenworth, Kansas (sec. 596) .....	191
Space-available travel on Department of Defense aircraft for veterans with service-connected disabilities rated as total (sec. 597) .....	192
Items of Special Interest .....	192
Administrative separation protections for members of the Armed Forces .....	192
Assessment of Department of Defense Education Activity's policies and procedures on student misconduct .....	192
Assessment of relocation of family members .....	193
Comptroller General report on Department of Defense original appointment and scrolling processes .....	193
Comptroller General study of dependency determinations for incapacitated adult children of military members .....	194
Dependent care flexible savings accounts .....	194
Facilitation of separation process and State veterans affairs offices ....	195
Improvements to licensure and credentialing for military spouses ....	195
Inclusion of the study of hybrid warfare in professional military education .....	197
Military childcare subsidies .....	197
National Guard Federal promotion delays .....	197
National Guard mental health pilot program .....	198
Permanent change of station frequency and impact on military families .....	198
Public-private partnerships on military installations .....	199
Reimbursement for certain costs incurred by states during domestic emergencies .....	199

	Page
TITLE V—MILITARY PERSONNEL POLICY —Continued	
Items of Special Interest—Continued	
Responding to cases of traumatic brain injury sustained in intimate partner violence event .....	200
Senior Military Acquisition Advisor eligibility .....	200
Specialized workshops for transitioning servicemembers .....	201
Training requirement for background check submissions .....	202
Understanding military family experiences of intimate partner violence and child abuse and neglect .....	202
Use of data analytics to facilitate assignment matching and military family stability .....	203
Use of reserve personnel for the Cyber Mission Force .....	203
Warm handoff for transitioning servicemembers suffering from post-traumatic stress disorder and traumatic brain injury .....	203
TITLE VI—COMPENSATION AND OTHER PERSONNEL BENEFITS .....	205
Subtitle A—Pay and Allowances .....	205
Fiscal year 2019 increase in military basic pay (sec. 601) .....	205
Repeal of authority for payment of personal money allowances to Navy officers serving in certain positions (sec. 602) .....	205
Department of Defense proposal for a pay table for members of the Armed Forces using steps in grade based on time in grade rather than time in service (sec. 603) .....	205
Financial support for lessors under the Military Housing Privatization Initiative during 2019 (sec. 604) .....	205
Modification of authority of President to determine alternative pay adjustment in annual basic pay of members of the uniformed services (sec. 605) .....	206
Eligibility of reserve component members for high-deployment allowance for lengthy or numerous deployments and frequent mobilizations (sec. 606) .....	206
Eligibility of reserve component members for nonreduction in pay while serving in the uniformed services or National Guard (sec. 607) .....	207
Temporary adjustment in rate of basic allowance for housing following identification of significant underdetermination of civilian housing costs for housing areas (sec. 608) .....	207
Subtitle B—Bonuses and Special and Incentive Pays .....	207
One-year extension of certain expiring bonus and special pay authorities (sec. 611) .....	207
Subtitle C—Disability Pay, Retired Pay, and Survivor Benefits .....	208
Technical corrections in calculation and publication of special survivor indemnity allowance cost of living adjustments (sec. 621) .....	208
Subtitle D—Other Matters .....	208
Rates of per diem for long-term temporary duty assignments (sec. 631) .....	208
Prohibition on per diem allowance reductions based on the duration of temporary duty assignment or civilian travel (sec. 632) .....	208
Items of Special Interest .....	208
Defense Commissary Agency and small businesses .....	208
Privatized on-base lodging program .....	208
Small business access to military exchange stores .....	209
TITLE VII—HEALTH CARE PROVISIONS .....	211
Subtitle A—Tricare and Other Health Care Benefits .....	211
Consolidation of cost-sharing requirements under TRICARE Select and TRICARE Prime (sec. 701) .....	211
Administration of TRICARE dental plans through the Federal Employees Dental Insurance Program (sec. 702) .....	211
Contraception coverage parity under the TRICARE Program (sec. 703) .....	212
Pilot program on opioid management in the military health system (sec. 704) .....	212
Pilot program on treatment of members of the Armed Forces for post-traumatic stress disorder related to military sexual trauma (sec. 705) .....	212
Subtitle B—Health Care Administration .....	213
Improvement of administration of Defense Health Agency and military medical treatment facilities (sec. 711) .....	213

	Page
TITLE VII—HEALTH CARE PROVISIONS—Continued	
Subtitle B—Health Care Administration—Continued	
Organizational framework of the military healthcare system to support medical requirements of the combatant commands (sec. 712) ...	214
Streamlining of TRICARE Prime beneficiary referral process (sec. 713) .....	215
Sharing of information with State prescription drug monitoring programs (sec. 714) .....	215
Improvement of reimbursement by Department of Defense of entities carrying out state vaccination programs in connection with vaccines provided to covered beneficiaries under the TRICARE program (sec. 715) .....	216
Subtitle C—Reports and Other Matters .....	216
Extension of authority for Joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund (sec. 721) .....	216
Increase in number of appointed members of the Henry M. Jackson Foundation for the Advancement of Military Medicine (sec. 722) .....	216
Cessation of requirement for mental health assessment of members after redeployment from a contingency operation upon discharge or release from the Armed Forces (sec. 723) .....	217
Pilot program on earning by special operations forces medics of credits towards a physician assistant degree (sec. 724) .....	217
Pilot program on partnerships with civilian organizations for specialized medical training (sec. 725) .....	217
Registry of individuals exposed to per- and polyfluoroalkyl substances on military installations (sec. 726) .....	218
Inclusion of gambling disorder in health assessments for members of the Armed Forces and related research efforts (sec. 727) .....	218
Comptroller General review of Defense Health Agency oversight of TRICARE managed care support contractors (sec. 728) .....	218
Items of Special Interest .....	219
Critical gaps in military physician specialties .....	219
Emerging technologies to mitigate and prevent traumatic brain injury .....	220
Expedited development and approval of medical products for emergency use on the battlefield .....	220
Explore feasibility of implementing a combat readiness assessment tool .....	220
Extended Care Health Option respite care services .....	221
Health risk surveillance of servicemembers in the United States Special Operations Command .....	221
MHS GENESIS .....	221
Mild traumatic brain injury screening tests .....	222
Procurement of telehealth solutions and services .....	222
Prostate cancer incidence among Active-Duty servicemembers .....	222
Rapid cerebral therapeutic hypothermia .....	223
Regenerative medicine research and development .....	223
Tricare access study .....	223
TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS .....	225
Subtitle A—Acquisition Policy and Management .....	225
Permanent Supply Chain Risk Management Authority (sec. 801) .....	225
Commercially available market research (sec. 802) .....	225
Comptroller General assessment on acquisition programs and related initiatives (sec. 803) .....	225
Subtitle B—Amendments to General Contracting Authorities, Procedures, and Limitations .....	226
Department of Defense contracting dispute matters (sec. 811) .....	226
Continuation of technical data rights during challenges (sec. 812) .....	227
Increased micro-purchase threshold (sec. 813) .....	227
Modification of limitations on single source task or delivery order contracts (sec. 814) .....	227
Preliminary cost analysis requirement for exercise of multiyear contract authority (sec. 815) .....	227
Inclusion of best available information regarding past performance of subcontractors and joint venture partners (sec. 816) .....	227

	Page
TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS—Continued	
Subtitle B—Amendments to General Contracting Authorities, Procedures, and Limitations—Continued	
Modification of criteria for waivers of requirement for certified cost and price data (sec. 817) .....	228
Subcontracting price and approved purchasing systems (sec. 818) .....	228
Comptroller General of the United States report on progress payment financing of Department of Defense contracts (sec. 819) .....	228
Authorization to limit foreign access to technology through contracts (sec. 820) .....	228
Briefing requirement on services contracts (sec. 821) .....	228
Sense of Congress on awarding of contracts to responsible companies that primarily employ American workers and do not actively transfer American jobs to potential adversaries (sec. 822) .....	229
Subtitle C—Provisions Relating to Major Defense Acquisition Programs ...	229
Program cost, fielding, and performance goals in planning major acquisition programs (sec. 831) .....	229
Implementation of recommendations of the Independent Study on Consideration of Sustainment in Weapons Systems Life Cycle (sec. 832) .....	229
Pilot program to accelerate major weapons system programs (sec. 833) .....	229
Subtitle D—Provisions Relating to Acquisition Workforce .....	230
Permanent authority for demonstration projects relating to acquisition personnel management policies and procedures (sec. 841) .....	230
Establishment of integrated review team on defense acquisition industry-government exchange (sec. 842) .....	230
Exchange program for acquisition workforce employees (sec. 843) .....	230
Subtitle E—Provisions Relating to Commercial Items .....	231
Report on commercial item procurement reform (sec. 851) .....	231
Subtitle F—Industrial Base Matters .....	231
National technology and industrial base application process (sec. 861) .....	231
Report on defense electronics industrial base (sec. 862) .....	231
Support for defense manufacturing communities to support the defense industrial base (sec. 863) .....	232
Subtitle G—Other Transactions .....	232
Change to notification requirement for other transactions (sec. 871) ...	232
Data and policy on the use of other transactions (sec. 872) .....	232
Subtitle H—Development and Acquisition of Software Intensive and Digital Products and Services .....	232
Clarifications regarding proprietary and technical data (sec. 881) .....	232
Implementation of recommendations of the final report of the Defense Science Board Task Force on the Design and Acquisition of Software for Defense Systems (sec. 882) .....	233
Implementation of pilot program to use agile or iterative development methods under section 873 of the National Defense Authorization Act for Fiscal Year 2018 (sec. 883) .....	233
Enabling and other activities of the Cloud Executive Steering Group (sec. 884) .....	234
Subtitle I—Other Matters .....	235
Prohibition on certain telecommunications services or equipment (sec. 891) .....	235
Limitation on use of funds pending submittal of report on Army Marketing and Advertising Program (sec. 892) .....	235
Permanent SBIR and STTR authority for the Department of Defense (sec. 893) .....	235
Procurement of telecommunications supplies for experimental purposes (sec. 894) .....	235
Access by developmental and operational testing activities to data regarding modeling and simulation activity (sec. 895) .....	235
Items of Special Interest .....	236
Analysis of technical and security issues in Department of Defense business systems .....	236
Assessment of Superior Supplier Incentive Programs .....	236

XVIII

	Page
TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS—Continued	
Items of Special Interest—Continued	
Incorporation of agile methods for testing in prototyping and streamlined fielding initiatives .....	236
Master plan for organic industrial base infrastructure .....	237
Serviceability and control of technical data .....	238
Use of Federal Aviation Administration approval for Department of Defense commercial derivative aircraft .....	239
TITLE IX—DEPARTMENT OF DEFENSE ORGANIZATION AND MANAGEMENT .....	241
Subtitle A—Office of the Secretary of Defense and Related Matters .....	241
Powers and duties of the Under Secretary of Defense for Research and Engineering in connection with priority emerging technologies (sec. 901) .....	241
Resignation and modification of responsibilities of Under Secretary of Defense for Personnel and Readiness (sec. 902) .....	241
Modification of responsibilities of the Under Secretary of Defense for Policy (sec. 903) .....	243
Report on allocation of former responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics (sec. 904) .....	243
Assistant Secretary of Defense for Strategy, Plans, Assessments, Readiness, and Capabilities (sec. 905) .....	243
Clarification of responsibilities and duties of the Chief Information Officer of the Department of Defense (sec. 906) .....	245
Specification of certain duties of the Defense Technical Information Center (sec. 907) .....	246
Limitation on termination of, and transfer of functions, responsibilities, and activities of, the Strategic Capabilities Office (sec. 908) .....	246
Technical corrections to Department of Defense Test Resource Management Center authority (sec. 909) .....	246
Subtitle B—Organization and Management of Other Department of Defense Offices and Elements .....	247
Modification of certain responsibilities of the Chairman of the Joint Chiefs of Staff relating to joint force concept development (sec. 921) .....	247
Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict review of United States Special Operations Command (sec. 922) .....	247
Qualifications for appointment as Deputy Chief Management Officer of a military department (sec. 923) .....	248
Expansion of principal duties of Assistant Secretary of the Navy for Research, Development, and Acquisition (sec. 924) .....	248
Cross-functional teams in the Department of Defense (sec. 925) .....	248
Deadline for completion of full implementation of requirements in connection with organization of the Department of Defense for management of special operations forces and special operations (sec. 926) .....	251
Subtitle C—Organization and Management of the Department of Defense Generally .....	253
Limitation on availability of funds for major headquarters activities of the Department of Defense (sec. 931) .....	253
Responsibility for policy on civilian casualty matters (sec. 932) .....	253
Additional matters in connection with background and security investigations for Department of Defense personnel (sec. 933) .....	253
Program of expedited security clearances for mission-critical positions (sec. 934) .....	254
Information sharing program for positions of trust (sec. 935) .....	254
Report on clearance in person concept (sec. 936) .....	254
Strategic Defense Fellows Program (sec. 937) .....	254
Subtitle D—Other Matters .....	255
Analysis of Department of Defense business management and operations datasets to promote savings and efficiencies (sec. 941) .....	255
Research and development to advance capabilities of the Department of Defense in data integration and advanced analytics in connection with personnel security (sec. 942) .....	255
Items of Special Interest .....	256

XIX

	Page
TITLE IX—DEPARTMENT OF DEFENSE ORGANIZATION AND MANAGEMENT—Continued	
Items of Special Interest—Continued	
Department of Defense personnel security resourcing plans and needs .....	256
Department of Defense security clearance responsibilities .....	256
Deputy Assistant Secretary of Defense for the Arctic .....	257
TITLE X—GENERAL PROVISIONS .....	259
Subtitle A—Financial Matters .....	259
General transfer authority (sec. 1001) .....	259
Inclusion of funds for Air Force pass-through items in Defense-wide budget for the Department of Defense (sec. 1002) .....	259
Report on shift in requests for funds for Department of Defense activities from funds for overseas contingency operations to funds through the base budget (sec. 1003) .....	259
Ranking of auditability of financial statements of the organizations and elements of the Department of Defense (sec. 1004) .....	260
Transparency of accounting firms used to support Department of Defense audit (sec. 1005) .....	260
Subtitle B—Naval Vessels and Shipyards .....	260
Date of listing of vessels as battle force ships in the Naval Vessel Register and other fleet inventory measures (sec. 1011) .....	260
Annual reports on examination of Navy vessels (sec. 1012) .....	260
Limitation on duration of homeporting of certain vessels in foreign locations (sec. 1013) .....	261
Specific authorization requirement for nuclear refueling of aircraft carriers (sec. 1014) .....	261
Dismantlement and disposal of nuclear-powered aircraft carriers (sec. 1015) .....	261
National Defense Sealift Fund (sec. 1016) .....	262
Limitation on use of funds for retirement of hospital ships (sec. 1017) .....	262
Subtitle C—Counterterrorism .....	263
Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States (sec. 1021) .....	263
Extension of prohibition on use of funds to construct or modify facilities in the United States to house detainees transferred from United States Naval Station, Guantanamo Bay, Cuba (sec. 1022) ..	263
Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to certain countries (sec. 1023) .....	263
Extension of prohibition on use of funds to close or relinquish control of United States Naval Station, Guantanamo Bay, Cuba (sec. 1024) .....	263
Authority to transfer individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States temporarily for emergency or critical medical treatment (sec. 1025) .....	264
Subtitle D—Miscellaneous Authorities and Limitations .....	264
Strategic guidance documents within the Department of Defense (sec. 1031) .....	264
Guidance on the electronic warfare mission area and joint electromagnetic spectrum operations (sec. 1032) .....	265
Limitation on use of funds for United States Special Operations Command Global Messaging and Counter-Messaging platform (sec. 1033) .....	266
Sense of Congress on the basing of KC-46A aircraft outside the continental United States (sec. 1034) .....	267
Relinquishment of legislative jurisdiction of criminal offenses committed by juveniles on military installations (sec. 1035) .....	267
Policy on response to juvenile-on-juvenile abuse committed on military installations (sec. 1036) .....	267
Subtitle E—Studies and Reports .....	267
Report on highest-priority roles and missions of the Department of Defense and the Armed Forces (sec. 1041) .....	267

	Page
TITLE X—GENERAL PROVISIONS—Continued	
Subtitle E—Studies and Reports—Continued	
Annual reports by the Armed Forces on Out-Year Unconstrained Total Munitions Requirements and Out-Year inventory numbers (sec. 1042) .....	268
Comprehensive review of operational and administrative chains-of- command and functions of the Department of the Navy (sec. 1043) .	268
Military aviation readiness review in support of the National Defense Strategy (sec. 1044) .....	268
Report on capabilities and capacities of Armored Brigade Combat Teams (sec. 1045) .....	269
Improvement of annual report on civilian casualties in connection with United States military operations (sec. 1046) .....	269
Report on Department of Defense participation in Export Administra- tion Regulations license application review process (sec. 1047) .....	269
Automatic sunset for future statutory reporting requirements (sec. 1048) .....	270
Repeal of certain Department of Defense reporting requirements that otherwise terminate as of December 31, 2021 (sec. 1049) .....	270
Report on potential improvements to certain military educational institutions of the Department of Defense (sec. 1050) .....	270
Recruiting costs of the Armed Forces (sec. 1051) .....	270
Subtitle F—Other Matters .....	270
Authority to transfer funds for Bien Hoa dioxin cleanup (sec. 1061) ...	270
Improvement of database on emergency response capabilities (sec. 1062) .....	271
Acceptance and distribution by Department of Defense of assistance from certain nonprofit entities in support of missions of deployed United States personnel around the world (sec. 1063) .....	271
United States policy with respect to freedom of navigation and over- flight (sec. 1064) .....	271
Prohibition of funds for Chinese language instruction provided by a Confucius Institute (sec. 1065) .....	272
Items of Special Interest .....	272
Audit materiality standards relating to valuation .....	272
Business case analysis for the 168th Air Refueling Wing .....	272
Chemical, Biological, Radiological, and Nuclear Response Enterprise .	273
Comptroller General report on monitoring ongoing challenges in re- motely piloted aircraft community .....	274
Comptroller General review of Federally Funded Research and Devel- opment Centers .....	274
Department of Defense information operations .....	275
Marine Mammal Program and Support to Civil Authorities .....	276
Navy mine countermeasures aboard vessels of opportunity .....	276
Nimitz-class aircraft carrier service life assessment .....	277
Overclassification of Department of Defense information .....	277
Policy of the Department of Defense on contract terms to support achievement of full financial audits .....	278
Report on training and readiness of Navy surface ships .....	278
Review of Surface Warfare Officer initial training .....	278
Strategic dispersal of capital ships .....	279
TITLE XI—CIVILIAN PERSONNEL MATTERS .....	281
Subtitle A—Department of Defense Matters .....	281
Inapplicability of certification of executive qualifications by qualifica- tion review boards of Office of Personnel Management for initial appointments to Senior Executive Service positions in Department of Defense (sec. 1101) .....	281
Direct hire authority for science and technology reinvention labora- tories and Major Range and Test Facilities Base facilities for recent science, technology, engineering, and mathematics graduates of mi- nority-serving institutions (sec. 1102) .....	281
Inclusion of Strategic Capabilities Office and Defense Innovation Unit Experimental of the Department of Defense in personnel management authority to attract experts in science and engineer- ing (sec. 1103) .....	281

	Page
TITLE XI—CIVILIAN PERSONNEL MATTERS—Continued	
Subtitle A—Department of Defense Matters—Continued	
Enhancement of flexible management authorities for Science and Technology Reinvention Laboratories of the Department of Defense (sec. 1104) .....	281
Inclusion of Office of Secretary of Defense among components of the Department of Defense covered by direct hire authority for financial management experts (sec. 1105) .....	282
Authority to employ civilian faculty members at the Joint Special Operations University (sec. 1106) .....	282
Subtitle B—Government-Wide Matters .....	282
Alcohol testing of civil service mariners of the Military Sealift Command assigned to vessels (sec. 1121) .....	282
Expedited hiring authority for college graduates and post secondary students (sec. 1122) .....	282
Increase in maximum amount of voluntary separation incentive pay authorized for civilian employees (sec. 1123) .....	282
One-year extension of temporary authority to grant allowances, benefits, and gratuities to civilian personnel on official duty in a combat zone (sec. 1124) .....	283
One-year extension of authority to waive annual limitation on premium pay and aggregate limitation on pay for Federal civilian employees working overseas (sec. 1125) .....	283
Items of Special Interest .....	283
Competitive salary and benefits for science, technology, engineering, and mathematics professionals .....	283
TITLE XII—MATTERS RELATING TO FOREIGN NATIONS .....	285
Subtitle A—Assistance and Training .....	285
Clarification of authority for use of advisors and trainers for training of personnel of foreign ministries with security missions under defense institution capacity building authorities (sec. 1201) .....	285
Modification to Department of Defense State Partnership Program (sec. 1202) .....	285
Expansion of Regional Defense Combating Terrorism Fellowship Program to include irregular warfare (sec. 1203) .....	285
Extension and modification of authority to support border security operations of certain foreign countries (sec. 1204) .....	286
Legal and policy review of advise, assist, and accompany missions (sec. 1205) .....	286
Technical corrections relating to defense security cooperation statutory reorganization (sec. 1206) .....	286
Naval Small Craft Instruction and Technical Training School (sec. 1207) .....	286
Subtitle B—Matters Relating to Afghanistan and Pakistan .....	287
Afghanistan Security Forces Fund (sec. 1211) .....	287
Extension and modification of authority for reimbursement of certain coalition nations for support provided to United States military operations (sec. 1212) .....	288
Extension of authority to transfer defense articles and provide defense services to the military and security forces of Afghanistan (sec. 1213) .....	288
Modification of reporting requirements for special immigrant visas for Afghan allies program (sec. 1214) .....	289
Subtitle C—Matters Relating to Syria, Iraq, And Iran .....	289
Extension of authority to provide assistance to counter the Islamic State of Iraq and Syria (sec. 1221) .....	289
Extension and modification of authority to provide assistance to the vetted Syrian opposition (sec. 1222) .....	290
Extension and modification of authority to support operations and activities of the Office of Security Cooperation in Iraq (sec. 1223) ...	291
Syria Study Group (sec. 1224) .....	292
Modification of annual report on military power of Iran (sec. 1225) ....	292
Subtitle D—Matters Relating to Europe and the Russian Federation .....	292
Extension of limitation on military cooperation between the United States and the Russian Federation (sec. 1231) .....	292
Limitation on availability of funds relating to sovereignty of the Russian Federation over Crimea (sec. 1232) .....	292

	Page
TITLE XII—MATTERS RELATING TO FOREIGN NATIONS—Continued	
Subtitle D—Matters Relating to Europe and the Russian Federation—	
Continued	
Extension of Ukraine Security Assistance Initiative (sec. 1233) .....	293
Sense of Senate on relocation of Joint Intelligence Analysis Complex	
(sec. 1234) .....	294
Sense of Senate on enhancing deterrence against Russian aggression	
in Europe (sec. 1235) .....	294
Technical amendments related to NATO Support and Procurement	
Organization and related NATO agreements (sec. 1236) .....	295
Report on security cooperation between the Russian Federation and	
Cuba, Nicaragua, and Venezuela (sec. 1237) .....	295
Sense of Senate on countering Russian malign influence (sec. 1238) ...	295
Subtitle E—Matters Relating to the Indo-Pacific Region .....	296
Redesignation, expansion, and extension of Southeast Asia Maritime	
Security Initiative (sec. 1241) .....	296
Modification of annual report on military and security developments	
involving the People's Republic of China (sec. 1242) .....	297
Sense of Senate on Taiwan (sec. 1243) .....	298
Redesignation and modification of sense of Congress and initiative	
for the Indo-Asia-Pacific region (sec. 1244) .....	298
Prohibition on participation of the People's Republic of China in	
Rim of the Pacific (RIMPAC) naval exercises (sec. 1245) .....	298
Assessment of and report on geopolitical conditions in the Indo-	
Pacific region (sec. 1246) .....	298
Sense of Senate on United States-India defense relationship (sec.	
1247) .....	299
Sense of Senate on strategic importance of maintaining commitments	
under Compacts of Free Association (sec. 1248) .....	299
Sense of the Senate on United States military forces on the Korean	
Peninsula (sec. 1249) .....	299
Subtitle F—Reports .....	300
Report on military and coercive activities of the People's Republic	
of China in the South China Sea (sec. 1251) .....	300
Report on terrorist use of human shields (sec. 1252) .....	300
Report on Arctic strategies (sec. 1253) .....	300
Report on permanent stationing of a United States Army brigade	
combat team in the Republic of Poland (sec. 1254) .....	301
Reports on nuclear capabilities of the Democratic People's Republic	
of Korea (sec. 1255) .....	301
Report on United States military training opportunities with allies	
and partners in the Indo-Pacific region (sec. 1256) .....	301
Subtitle G—Others Matters .....	302
Modification of authorities relating to acquisition and cross-servicing	
agreements (sec. 1261) .....	302
Extension of authority for transfer of amounts for Global Engage-	
ment Center (sec. 1262) .....	302
Sense of Senate on purchase by Turkey of S-400 air defense system	
(sec. 1263) .....	303
Department of Defense support for stabilization activities in national	
security interest of the United States (sec. 1264) .....	304
Enhancement of U.S.-Israel defense cooperation (sec. 1265) .....	304
Certifications regarding actions by Saudi Arabia in Yemen (sec.	
1266) .....	305
Sense of the Senate on support for G5 Sahel Joint Force countries	
(sec. 1267) .....	305
Sense of Congress on broadening and expanding strategic partner-	
ships and allies (sec. 1268) .....	305
Removal of Turkey from the F-35 program (sec. 1269) .....	305
Increase in minimum amount of obligations from the Special Defense	
Acquisition Fund for precision guided munitions (sec. 1270) .....	306
Items of Special Interest .....	306
Advise and assist efforts in Afghanistan .....	306
Clarification of authority to waive certain expenses for activities	
of regional centers for security studies .....	307
Defense Institute of International Legal Studies .....	307
Human rights in Burma .....	308

	Page
TITLE XII—MATTERS RELATING TO FOREIGN NATIONS—Continued	
Items of Special Interest—Continued	
Matters relating to Kosovo .....	309
Notifications for sensitive military operations .....	310
Report on U.S. assistance to the Lebanese Security Forces .....	311
Report on WRSA-I Stockpile Quantity Review .....	312
Role of Turkey in the F-35 supply chain .....	312
United States-Mexico military cooperation .....	313
United States policy and strategy in the Western Balkans .....	314
U.S. Africa Command .....	315
TITLE XIII—COOPERATIVE THREAT REDUCTION .....	317
Specification of Cooperative Threat Reduction funds (sec. 1301) .....	317
Funding allocations (sec. 1302) .....	317
TITLE XIV—OTHER AUTHORIZATIONS .....	319
Subtitle A—Military Programs .....	319
Working capital funds (sec. 1401) .....	319
Chemical Agents and Munitions Destruction, Defense (sec. 1402) .....	319
Drug Interdiction and Counter-Drug Activities, Defense-wide (sec. 1403) .....	319
Defense Inspector General (sec. 1404) .....	319
Defense Health Program (sec. 1405) .....	319
Subtitle B—National Defense Stockpile .....	319
Consolidation of reporting requirements under the Strategic and Critical Materials Stock Piling Act (sec. 1411) .....	319
Subtitle C—Armed Forces Retirement Home .....	319
Authorization of appropriations for Armed Forces Retirement Home (sec. 1421) .....	319
Expansion of eligibility for residence at the Armed Forces Retirement Home (sec. 1422) .....	320
Oversight of health care provided to residents of the Armed Forces Retirement Home (sec. 1423) .....	320
Modification of authority on acceptance of gifts for the Armed Forces Retirement Home (sec. 1424) .....	320
Relief for residents of the Armed Forces Retirement Home impacted by increase in fees (sec. 1425) .....	320
Limitation on applicability of fee increase for residents of the Armed Forces Retirement Home (sec. 1426) .....	321
Subtitle D—Other Matters .....	321
Authority for transfer of funds to joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund for Captain James A. Lovell Health Care Center, Illinois (sec. 1431) .....	321
Economical and efficient operation of working capital fund activities (sec. 1432) .....	321
Items of Special Interest .....	321
Assessment on material shortfalls in United States Forces Korea for chemical, biological, radiological, and nuclear defenses .....	321
Fiscal stability of the National Defense Stockpile .....	322
TITLE XV—AUTHORIZATION OF ADDITIONAL APPROPRIATIONS FOR OVERSEAS CONTINGENCY OPERATIONS .....	323
Subtitle A—Authorization of Additional Appropriations .....	323
Purpose (sec. 1501) .....	323
Overseas contingency operations (sec. 1502) .....	323
Procurement (sec. 1503) .....	323
Research, development, test, and evaluation (sec. 1504) .....	323
Operation and maintenance (sec. 1505) .....	323
Military personnel (sec. 1506) .....	323
Working capital funds (sec. 1507) .....	323
Drug Interdiction and Counter-Drug Activities, Defense-wide (sec. 1508) .....	323
Defense Inspector General (sec. 1509) .....	324
Defense Health Program (sec. 1510) .....	324
Subtitle B—Financial Matters .....	324
Treatment as additional authorizations (sec. 1521) .....	324
Special transfer authority (sec. 1522) .....	324
Subtitle C—Other Matters .....	324
Joint Improvised-Threat Defeat Organization (sec. 1531) .....	324

	Page
TITLE XV—AUTHORIZATION OF ADDITIONAL APPROPRIATIONS FOR OVERSEAS CONTINGENCY OPERATIONS—Continued	
Budget Items .....	324
Tomahawk .....	324
Ammunition less than \$5 million .....	325
JASSM-ER .....	325
Items of Special Interest .....	325
Cargo inspections to counter Vehicle Borne Improvised Explosive Device (IED) threats .....	325
TITLE XVI—STRATEGIC PROGRAMS, CYBER, AND INTELLIGENCE MATTERS .....	327
Subtitle A—Space Activities .....	327
Modifications to Space Rapid Capabilities Office (sec. 1601) .....	327
Space warfighting policy and review of space capabilities (sec. 1602) ..	327
Report on enhancements to the Global Positioning System Oper- ational Control Segment (sec. 1603) .....	327
Streamline of commercial space launch operations (sec. 1604) .....	328
Reusable launch vehicles (sec. 1605) .....	328
Review of and report on activities of International Space Station (sec. 1606) .....	328
Subtitle B—Defense Intelligence and Intelligence-Related Activities .....	329
Framework on governance, mission management, resourcing, and ef- fective oversight of Department of Defense combat support agencies that are also elements of the intelligence community (sec. 1611) .....	329
Subtitle C—Cyberspace—Related Matters .....	329
Part I—Cyberspace Generally .....	329
Policy of the United States on cyberspace, cybersecurity, cyber warfare, and cyber deterrence (sec. 1621) .....	329
Affirming the authority of the Secretary of Defense to conduct military activities and operations in cyberspace (sec. 1622) .....	329
Active defense and surveillance against Russian Federation at- tacks in cyberspace (sec. 1623) .....	330
Reorganization and consolidation of certain cyber provisions (sec. 1624) .....	331
Designation of official for matters relating to integrating cyberse- curity and industrial control systems within the Department of Defense (sec. 1625) .....	332
Assistance for small manufacturers in the defense industrial sup- ply chain on matters relating to cybersecurity (sec. 1626) .....	332
Modification of acquisition authority of the Commander of United States Cyber Command (sec. 1627) .....	333
Email and Internet website security and authentication (sec. 1628) .....	333
Matters pertaining to the Sharkseer cybersecurity programs (sec. 1629) .....	333
Pilot program on modeling and simulation in support of military homeland defense operations in connection with cyber attacks on critical infrastructure (sec. 1630) .....	334
Security product integration framework (sec. 1631) .....	335
Report on enhancement of software security for critical systems (sec. 1632) .....	336
Comply to connect and cybersecurity scorecard (sec. 1633) .....	337
Cyberspace Solarium Commission (sec. 1634) .....	338
Program to establish cyber institutes at institutions of higher learning (sec. 1635) .....	339
Establishment of Cybersecurity for Defense Industrial Base Man- ufacturing Activity (sec. 1636) .....	339
Part II—Mitigation of Risks Posed by Providers of Information Tech- nology with Obligations to Foreign Governments .....	339
Definitions (sec. 1637) .....	339
Identification of countries of concern regarding cybersecurity (sec. 1638) .....	340
Mitigation of risks to national security posed by providers of information technology products and services who have obliga- tions to foreign governments (sec. 1639) .....	340
Establishment of registry of disclosures (sec. 1640) .....	340
Subtitle D—Nuclear Forces .....	341

	Page
TITLE XVI—STRATEGIC PROGRAMS, CYBER, AND INTELLIGENCE MATTERS—Continued	
Subtitle D—Nuclear Forces—Continued	
Oversight and management of the command, control, and communications system for the national leadership of the United States (sec. 1641) .....	341
Modification to requirement for conventional long-range standoff weapon (sec. 1642) .....	341
Exchange program for nuclear weapons program employees (sec. 1643) .....	341
Procurement authority for certain parts of intercontinental ballistic missile fuzes (sec. 1644) .....	342
Plan to train officers in nuclear command, control, and communications (sec. 1645) .....	342
Plan for alignment of acquisition of warhead life extension programs and delivery vehicles for such warheads (sec. 1646) .....	343
Extension of annual report on plan for the nuclear weapons stockpile, nuclear weapons complex, nuclear weapons delivery systems, and nuclear weapons command and control system (sec. 1647) .....	343
Prohibition on use of funds for activities to modify United States aircraft to implement Open Skies Treaty (sec. 1648) .....	344
Sense of Senate on Nuclear Posture Review (sec. 1649) .....	344
Subtitle E—Missile Defense Programs .....	344
Extension of prohibition relating to missile defense information and systems (sec. 1651) .....	344
Multiyear procurement authority for Standard Missile-3 IB guided missiles (sec. 1652) .....	344
Extension of requirement for reports on unfunded priorities of Missile Defense Agency (sec. 1653) .....	345
Iron Dome short-range rocket defense system and Israeli cooperative missile defense program co-development and co-production (sec. 1654) .....	345
Metrics for evaluating effectiveness of integrated Ballistic Missile Defense System against operationally realistic ballistic missile attacks (sec. 1655) .....	346
Modification of requirement relating to transition of ballistic missile defense programs to military departments (sec. 1656) .....	347
Sense of the Senate on acceleration of missile defense capabilities (sec. 1657) .....	347
Integrated air and missile defense for evolving theater missile threats (sec. 1658) .....	348
Acceleration of hypersonic missile defense program (sec. 1659) .....	348
Sense of the Senate on allied partnerships for missile defense (sec. 1660) .....	348
Sense of the Senate on results of tests carried out by Missile Defense Agency (sec. 1660A) .....	348
Sense of the Senate on discrimination for missile defense (sec. 1660B) .....	348
Development and deployment of persistent space-based sensor architecture (sec. 1660C) .....	349
Modification of requirement to develop a space-based ballistic missile intercept layer (sec. 1660D) .....	349
Subtitle F—Other Matters .....	349
Assessment of the electronic warfare capabilities of Russia and China (sec. 1661) .....	349
Budget exhibit on support provided to entities outside Department of Defense (sec. 1662) .....	349
Development of Electromagnetic Battle Management capability for joint electromagnetic operations (sec. 1663) .....	350
Budget Items .....	350
Army Cyber Center of Excellence .....	350
Wargaming and simulator systems .....	350
Ground Based Strategic Deterrent .....	351
Space Rapid Capabilities Office .....	351
Long Range Standoff Weapon .....	351
Next-Generation Overhead Persistent Infrared .....	352
Joint Space Operations Center Mission System .....	352

	Page
TITLE XVI—STRATEGIC PROGRAMS, CYBER, AND INTELLIGENCE MATTERS—Continued	
Budget Items—Continued	
Hypersonic missile defense .....	352
Exploiting commercial technology for synthetic aperture radar imaging and automated exploitation .....	352
United States Forces Korea Joint Emergent Operational Need .....	353
Midcourse ballistic missile defense .....	354
Command and Control, Battle Management and Communications .....	354
Sea-based X-band Radar .....	354
Ballistic missile defense targets .....	355
Boost phase intercept laser scaling .....	355
Quartermaster Pathfinder .....	355
Improved homeland defense interceptors .....	355
Midcourse segment test for ballistic missile defense .....	356
Missile Defense Tracking System .....	356
Items of Special Interest .....	356
Air Force nuclear acquisition programs .....	356
Airborne tracking and targeting system .....	357
Assessment of and plan for experimentation with Iron Dome for short-range air defense .....	357
Common Minuteman III maintenance vehicle .....	358
Comptroller General review of Department of Defense cyber classification .....	358
Comptroller General review of Department of Defense cyber hygiene .....	358
Comptroller General review of geographic combatant command integration in nuclear planning and operations .....	359
Conventional Prompt Strike early limited operational capability .....	360
Counter-Unmanned Aircraft Systems Technology .....	360
Cyber attacks by the Russian Federation and People's Republic of China on Department of Defense affiliates .....	361
Defense options for Guam .....	361
Department of Defense efforts to cooperate with Department of Homeland Security Fusion Centers .....	361
Digital High Frequency Global Communications System .....	362
Diversified access to space with Federal Aviation Administration-licensed spaceports .....	362
Early Warning Radar upgrades .....	364
Importance of Naval Nuclear Propulsion Program to United States strategic deterrence .....	365
Laser communications .....	365
Launch vehicle reusability .....	365
Layered ballistic missile defense .....	366
Live fire training on missiles nearing demilitarization .....	366
Long-term plan for weapons storage facilities .....	366
Mapping of Department of Defense base stations .....	367
Matters related to Department of Defense cyber ranges .....	367
Microsegmentation .....	368
Modular array for the direct distribution of integrated energy on small satellites .....	369
Nuclear Command, Control, and Communications Program Executive Office staffing .....	369
On-orbit satellite servicing technology .....	369
Portable satellite data receiver suites for deployed warfighters .....	370
Review of connected devices on military installations .....	370
Space Rapid Capabilities Office .....	370
Transition of the Strategic Automatic Control and Communications System to the Navy Nova Communications System .....	371
United States-North Korea nuclear and missile threat reduction .....	371
TITLE XVII—COMMITTEE ON FOREIGN INVESTMENT IN THE UNITED STATES .....	373
Short title (sec. 1701) .....	373
Sense of Congress (sec. 1702) .....	373
Definitions (sec. 1703) .....	373
Acceptance of written notices (sec. 1704) .....	373
Inclusion of partnership and side agreements in notice (sec. 1705) .....	374
Declarations for certain covered transactions (sec. 1706) .....	374

	Page
TITLE XVII—COMMITTEE ON FOREIGN INVESTMENT IN THE UNITED STATES—Continued	
Stipulations regarding transactions (sec. 1707) .....	374
Authority for unilateral initiation of reviews (sec. 1708) .....	374
Timing for reviews and investigations (sec. 1709) .....	374
Monitoring of non-notified and non-declared transactions (sec. 1710) ..	374
Submission of certifications to Congress (sec. 1711) .....	375
Analysis by Director of National Intelligence (sec. 1712) .....	375
Information sharing (sec. 1713) .....	375
Action by the President (sec. 1714) .....	375
Judicial review (sec. 1715) .....	375
Membership and staff of Committee (sec. 1716) .....	375
Actions by the Committee to address national security risks (sec. 1717) .....	376
Modification of annual report and other reporting requirements (sec. 1718) .....	376
Certification of notices and information (sec. 1719) .....	376
Implementation plans (sec. 1720) .....	376
Assessment of need for additional resources for Committee (sec. 1721) .....	376
Funding (sec. 1722) .....	376
Centralization of certain Committee functions (sec. 1723) .....	377
Conforming amendments (sec. 1724) .....	377
Requirements to identify and control the export of emerging and foundational technologies (sec. 1725) .....	377
Export control enforcement authority (sec. 1726) .....	377
Prohibition on modification of civil penalties under export control and sanctions laws (sec. 1727) .....	377
Under Secretary of Commerce for Industry and Security (sec. 1728) ..	377
Limitation on cancellation of designation of Secretary of the Air Force as Department of Defense Executive Agent for a certain Defense Production Act program (sec. 1729) .....	378
Review of and report on certain defense technologies critical to the United States maintaining superior military capabilities (sec. 1730) .....	378
Briefing on information from transactions reviewed by Committee on Foreign Investment in the United States relating to foreign efforts to influence democratic institutions and processes (sec. 1731) .....	378
Effective date (sec. 1732) .....	378
Severability (sec. 1733) .....	378
DIVISION B—MILITARY CONSTRUCTION AUTHORIZATIONS .....	379
Summary and explanation of funding tables .....	379
Short title (sec. 2001) .....	379
Expiration of authorizations and amounts required to be specified by law (sec. 2002) .....	379
Effective date (sec. 2003) .....	379
TITLE XXI—ARMY MILITARY CONSTRUCTION .....	381
Summary .....	381
Authorized Army construction and land acquisition projects (sec. 2101) .....	381
Family housing (sec. 2102) .....	381
Authorization of appropriations, Army (sec. 2103) .....	381
Extension of authorizations of certain fiscal year 2015 projects (sec. 2104) .....	381
Extension of authorizations of certain fiscal year 2016 project (sec. 2105) .....	382
TITLE XXII—NAVY MILITARY CONSTRUCTION .....	383
Summary .....	383
Authorized Navy construction and land acquisition projects (sec. 2201) .....	383
Family housing (sec. 2202) .....	383
Improvements to military family housing units (sec. 2203) .....	383
Authorization of appropriations, Navy (sec. 2204) .....	383
TITLE XXIII—AIR FORCE MILITARY CONSTRUCTION .....	385
Summary .....	385

XXVIII

	Page
TITLE XXIII—AIR FORCE MILITARY CONSTRUCTION—Continued	
Authorized Air Force construction and land acquisition projects (sec. 2301) .....	385
Family housing (sec. 2302) .....	385
Improvements to military family housing units (sec. 2303) .....	385
Authorization of appropriations, Air Force (sec. 2304) .....	385
Modification of authority to carry out certain phased project authorized in fiscal years 2015, 2016, and 2017 (sec. 2305) .....	386
Modification of authority to carry out certain fiscal year 2017 project (sec. 2306) .....	386
Modification of authority to carry out certain fiscal year 2018 project (sec. 2307) .....	386
Additional authority to carry out certain fiscal year 2019 projects (sec. 2308) .....	386
TITLE XXIV—DEFENSE AGENCIES MILITARY CONSTRUCTION .....	387
Summary .....	387
Authorized defense agencies construction and land acquisition projects (sec. 2401) .....	387
Energy Resilience and Conservation Investment Program (sec. 2402) ..	387
Authorization of appropriations, defense agencies (sec. 2403) .....	387
Extension of authorizations of certain fiscal year 2015 projects (sec. 2404) .....	387
Authorization of certain fiscal year 2018 project (sec. 2405) .....	388
TITLE XXV—INTERNATIONAL PROGRAMS .....	389
Summary .....	389
Subtitle A—North Atlantic Treaty Organization Security Investment Program .....	389
Authorized NATO construction and land acquisition projects (sec. 2501) .....	389
Authorization of appropriations, NATO (sec. 2502) .....	389
Subtitle B—Host Country In-Kind Contributions .....	389
Republic of Korea funded construction projects (sec. 2511) .....	389
TITLE XXVI—GUARD AND RESERVE FORCES FACILITIES .....	391
Summary .....	391
Subtitle A—Project Authorizations and Authorization of Appropriations ...	391
Authorized Army National Guard construction and land acquisition projects (sec. 2601) .....	391
Authorized Army Reserve construction and land acquisition projects (sec. 2602) .....	391
Authorized Navy Reserve and Marine Corps Reserve construction and land acquisition projects (sec. 2603) .....	391
Authorized Air National Guard construction and land acquisition projects (sec. 2604) .....	391
Authorized Air Force Reserve construction and land acquisition projects (sec. 2605) .....	392
Authorization of appropriations, National Guard and Reserve (sec. 2606) .....	392
Subtitle B—Other Matters .....	392
Modification of authority to carry out certain fiscal year 2016 project (sec. 2611) .....	392
Modification of authority to carry out certain fiscal year 2018 project (sec. 2612) .....	392
Additional authority to carry out certain fiscal year 2019 project (sec. 2613) .....	392
TITLE XXVII—BASE REALIGNMENT AND CLOSURE ACTIVITIES .....	393
Summary and explanation of tables .....	393
Authorization of appropriations for base realignment and closure activities funded through Department of Defense Base Closure Account (sec. 2701) .....	393
Prohibition on conducting additional base realignment and closure (BRAC) round (sec. 2702) .....	393
Items of Special Interest .....	393
Aligning base realignment and closure goals with infrastructure .....	393
TITLE XXVIII—MILITARY CONSTRUCTION AND GENERAL PROVISIONS .....	395
Subtitle A—Military Construction Program and Military Family Housing Changes .....	395

	Page
TITLE XXVIII—MILITARY CONSTRUCTION AND GENERAL PROVISIONS—Continued	
Subtitle A—Military Construction Program and Military Family Housing Changes—Continued	
Additional authority to obtain architectural and engineering services and construction design for defense laboratory modernization pilot program (sec. 2801)	395
Modification of contract authority for acquisition, construction, or furnishing of test facilities and equipment (sec. 2802)	395
Extension of temporary, limited authority to use operation and maintenance funds for construction projects in certain areas outside the United States (sec. 2803)	396
Unspecified minor military construction projects related to revitalization and recapitalization of Defense Industrial Base Facilities (sec. 2804)	396
Congressional oversight of projects carried out pursuant to laws other than Military Construction Authorization Acts (sec. 2805)	396
Subtitle B—Project Management and Oversight Reforms	396
Updates and modifications to Department of Defense Form 1391, Unified Facilities Criteria, and military installation master plans (sec. 2811)	396
Work in Process Curve charts and outlay tables for military construction projects (sec. 2812)	397
Subtitle C—Land Conveyances	397
Land exchange, Air Force Plant 44, Tucson, Arizona (sec. 2821)	397
Land conveyance, Eglin Air Force Base, Florida (sec. 2822)	397
Subtitle D—Other Matters	397
Commemoration of Freedman's Village (sec. 2831)	397
Strategic plan to improve capability of Department of Defense training ranges and installations (sec. 2832)	397
Native American Indian lands environmental mitigation program (sec. 2833)	397
Defense community infrastructure pilot program (sec. 2834)	398
Representation of installation interests in negotiations and proceedings with carriers and other public utilities (sec. 2835)	398
White Sands Missile Range land enhancements (sec. 2836)	398
Authority to transfer funds for construction of Indian River Bridge (sec. 2837)	398
Items of Special Interest	398
Assessment of military structures in permafrost areas	398
Encouraging the use of existing authorities for construction of future National Guard Readiness Center	399
Excess capacity estimates	399
Federal land transfer for South Carolina National Guard	400
Incremental funding of military construction projects	400
Installation and facilities physical security gaps	401
National Maritime Intelligence Center Parking	401
Process for prioritizing funding and identifying facilities for demolition	402
Review of Army Corps of Engineers Centers of Standardization	402
Standoff weapons facility project at Andersen Air Force Base	403
TITLE XXIX—OVERSEAS CONTINGENCY OPERATIONS MILITARY CONSTRUCTION	405
Summary	405
Authorized Army construction and land acquisition projects (sec. 2901)	405
Authorized Navy construction and land acquisition projects (sec. 2902)	405
Authorized Air Force construction and land acquisition projects (sec. 2903)	405
Authorized Defense Agencies construction and land acquisition projects (sec. 2904)	405
Authorization of appropriations (sec. 2905)	405
DIVISION C—DEPARTMENT OF ENERGY NATIONAL SECURITY AUTHORIZATIONS AND OTHER AUTHORIZATIONS	407
TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS	407

	Page
TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PRO- GRAMS—Continued	
Subtitle A—National Security Programs Authorizations .....	407
National Nuclear Security Administration (sec. 3101) .....	407
Defense environmental cleanup (sec. 3102) .....	407
Other defense activities (sec. 3103) .....	407
Nuclear energy (sec. 3104) .....	407
Subtitle B—Program Authorizations, Restrictions, and Limitations .....	407
Clarification of roles and authorities of National Nuclear Security Administration (sec. 3111) .....	407
National Nuclear Security Administration Personnel System (sec. 3112) .....	409
Amendments to the Atomic Energy Act of 1954 (sec. 3113) .....	409
Extension of enhanced procurement authority to manage supply chain risk (sec. 3114) .....	410
Pilot program on conduct by Department of Energy of background reviews for access by certain individuals to national security lab- oratories (sec. 3115) .....	410
Extension of authority for acceptance of contributions for acceleration of removal or security of fissile materials, radiological materials, and related equipment at vulnerable sites worldwide (sec. 3116) .....	410
Modification of limitation on development of low-yield nuclear weap- ons (sec. 3117) .....	411
Prohibition on use of funds for terminating activities at MOX facility (sec. 3118) .....	411
Subtitle C—Plans and Reports .....	411
Modifications to cost-benefit analyses for competition of management and operating contracts (sec. 3121) .....	411
Review of defense environmental cleanup activities (sec. 3122) .....	412
Survey of workforce of national security laboratories and nuclear weapons production facilities (sec. 3123) .....	412
Elimination of certain reports (sec. 3124) .....	412
Implementation of Nuclear Posture Review by National Nuclear Se- curity Administration (sec. 3125) .....	412
Budget Items .....	412
W76-2 .....	412
Defense nuclear waste disposal .....	413
Items of Special Interest .....	413
Comptroller General review of domestic uranium industrial base .....	413
Comptroller General review of Mixed Oxide Fuel Fabrication Facility Comptroller General review of strategic radiation-hardened micro- electronics .....	414
Independent review of Engineering Assessment of plutonium pit pro- duction .....	415
Nuclear smuggling detection in Iraq .....	416
Repackaging of Transuranic Waste Drums at the Idaho National Laboratory .....	416
Review of National Nuclear Security Administration regulation .....	416
Roadmap for National Nuclear Security Administration production capability improvements .....	417
Status of Russian nuclear security upgrades .....	418
TITLE XXXII—DEFENSE NUCLEAR FACILITIES SAFETY BOARD .....	419
Authorization (sec. 3201) .....	419
Title XXXV—Maritime Administration .....	421
Maritime Administration (sec. 3501) .....	421
Permanent authority of Secretary of Transportation to issue vessel war risk insurance (sec. 3502) .....	421
DIVISION D—FUNDING TABLES .....	423
Authorization of amounts in funding tables (sec. 4001) .....	423
TITLE XLI—PROCUREMENT .....	435
Procurement (sec. 4101) .....	436
Procurement for overseas contingency operations (sec. 4102) .....	478
TITLE XLII—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION .....	491
Research, development, test, and evaluation (sec. 4201) .....	492
Research, development, test, and evaluation for overseas contingency operations (sec. 4202) .....	533
TITLE XLIII—OPERATION AND MAINTENANCE .....	537

	Page
TITLE XLIII—OPERATION AND MAINTENANCE—Continued	
Operation and maintenance (sec. 4301) .....	538
Operation and maintenance for overseas contingency operations (sec. 4302) .....	556
TITLE XLIV—MILITARY PERSONNEL .....	567
Military personnel (sec. 4401) .....	568
Military personnel for overseas contingency operations (sec. 4402) .....	569
TITLE XLV—OTHER AUTHORIZATIONS .....	571
Other authorizations (sec. 4501) .....	572
Other authorizations for overseas contingency operations (sec. 4502) .....	576
TITLE XLVI—MILITARY CONSTRUCTION .....	579
Military construction (sec. 4601) .....	580
Military construction for overseas contingency operations (sec. 4602) .....	600
TITLE XLVII—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS .....	603
Department of Energy national security programs (sec. 4701) .....	604
LEGISLATIVE REQUIREMENTS .....	616
Departmental Recommendations .....	616
Committee Action .....	616
Congressional Budget Office Cost Estimate .....	620
Regulatory Impact .....	620
Changes in Existing Law .....	620



## Calendar No. 439

115TH CONGRESS }  
2d Session }

SENATE

{ REPORT  
{ 115-262

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TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2019 FOR MILITARY  
ACTIVITIES OF THE DEPARTMENT OF DEFENSE AND FOR MILITARY  
CONSTRUCTION, TO MILITARY PERSONNEL STRENGTHS FOR SUCH FIS-  
CAL YEAR, AND FOR OTHER PURPOSES

—————  
JUNE 5, 2018.—Ordered to be printed  
—————

Mr. MCCAIN, from the Committee on Armed Services,  
submitted the following

### R E P O R T

[To accompany S. 2987]

The Committee on Armed Services reports favorably an original bill to authorize appropriations for the fiscal year 2019 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe military personnel strengths for such fiscal year, and for other purposes, and recommends that the bill do pass.

#### PURPOSE OF THE BILL

This bill would:

- (1) Authorize appropriations for (a) procurement, (b) research, development, test and evaluation, (c) operation and maintenance and the revolving and management funds of the Department of Defense for fiscal year 2019;
- (2) Authorize the personnel end strengths for each military active duty component of the Armed Forces for fiscal year 2019;
- (3) Authorize the personnel end strengths for the Selected Reserve of each of the reserve components of the Armed Forces for fiscal year 2019;
- (4) Impose certain reporting requirements;
- (5) Impose certain limitations with regard to specific procurement and research, development, test and evaluation actions and manpower strengths; provide certain additional legislative authority, and make certain changes to existing law;
- (6) Authorize appropriations for military construction programs of the Department of Defense for fiscal year 2019; and

(7) Authorize appropriations for national security programs of the Department of Energy for fiscal year 2019.

### COMMITTEE OVERVIEW

One of Congress' most important constitutional responsibilities is providing for the common defense. To fulfill this fundamental duty, Congress has for the last 57 consecutive years passed the National Defense Authorization Act (NDAA), which authorizes funding and provides authorities for the U.S. military. The Senate Armed Services Committee voted overwhelmingly, 25–2, to advance this important legislation to the Senate floor.

The committee takes seriously its obligation to our men and women in uniform and their families. Their service represents the best of our country, and this committee and the Congress honor their sacrifice.

The committee markup of the NDAA, which is this year named the John S. McCain National Defense Authorization Act for Fiscal Year 2019, supports a total of \$716 billion for national defense. The committee believes this authorization is necessary to help the U.S. military implement the National Defense Strategy (NDS) as it restores readiness, rebuilds capacity, and modernizes the force.

The committee markup:

- Authorizes critical funding for the Department of Defense (DOD) to rebuild a ready and capable force by increasing maritime capacity, procuring combat aircraft and munitions, increasing operation and maintenance funding, and aligning end strength to NDS requirements.
- Ensures the long-term viability of the all-volunteer force by improving the quality of life of the men and women of the total force (Active Duty, National Guard, and Reserves), their families, and the civilians and contractors who support our Armed Forces through fair pay and policies, including reform of the officer personnel management system.
- Continues oversight and reform of the acquisition system to ensure that our men and women in uniform have the equipment they need to succeed in future contested environments and drives innovation by allocating funds for advanced technology development and next-generation capabilities to ensure America's military dominance.
- Reforms the DOD to effectively confront the challenges outlined in the NDS and emerging threats in the information domain.
- Advances our ability to protect our allies, partners, and friends.
- Enhances the capability of the U.S. Armed Forces along with the security forces of allied and partner nations to combat ISIS, Al-Qaida, and other violent extremist organizations while ensuring there is a strategy for success.
- Supports implementation of the Nuclear Posture Review through modernization of our nuclear deterrent and reforms to ensure the safety, security, and reliability of our nuclear stockpile, delivery systems, and infrastructure.
- Terminates troubled and redundant programs and activities, identifies efficiencies, and reduces unnecessary defense expenditures not in line with the NDS.

- Promotes aggressive and thorough oversight of the Department's programs and activities to ensure compliance with relevant laws and regulations and proper stewardship of taxpayer dollars.

### **Preamble to the John S. McCain National Defense Authorization Act for Fiscal Year 2019**

The array of national security threats facing the United States is more complex and diverse than at any time since World War II. The strategic environment has not been this competitive since the Cold War. Simply put, America no longer enjoys the comparative edge it once had over its competitors and adversaries.

To remain successful, America must maintain its military advantage, counter potential adversaries, and defend the international order that has protected and advanced the security, prosperity, and liberty of U.S. citizens and our allies and partners. This requires a strategic framework that establishes clear priorities and helps make tough choices.

Believing that the strategy development process in the Department of Defense (DOD) needed to be reinvigorated, the Congress acted in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) to replace the legislative mandate for the Quadrennial Defense Review with the framework for a more focused and flexible National Defense Strategy (NDS). The legislation included a clearly defined set of expectations for what the strategy should address, including the current and anticipated strategic environment, prioritization among threats and missions, the roles and missions of the Armed Forces, force planning constructs and scenarios, force posture and readiness, and anticipated major investments required to execute the strategy. The desire to facilitate a more strategic approach to national defense also contributed to the Congress' willingness to forge a bipartisan budget agreement that increased defense and non-defense spending and provided a modicum of fiscal predictability through the end of next year.

The committee applauds Secretary of Defense James Mattis and the senior leadership of the Department for their efforts in crafting the National Defense Strategy that was delivered to the Congress earlier this year. The document prioritizes the challenges our nation faces and points toward potentially significant changes to reshape the joint force and business of the DOD. At the same time, much of the hardest work remains to translate the NDS into detailed policy guidance to realign defense programs, readiness, and posture in accordance with the strategy. This responsibility rests equally with the executive and legislative branches.

The committee is doing its part to meet its responsibilities through the National Defense Authorization Act (NDAA) for Fiscal Year 2019. Informed by the strategy, as well as the administration's fiscal year 2019 budget request, the NDAA aligns investments, requirements, structures, policies, and authorizations with the new strategic orientation articulated in the NDS.

The NDAA supports the latest budget agreement of \$715.9 billion in fiscal year 2019 for national defense. It authorizes a base defense budget of \$639.2 billion for the Department of Defense and the national security programs of the Department of Energy. The focus of this funding will be building a joint force that is ready,

equipped, and capable of maintaining military overmatch against potential adversaries. The NDAA also authorizes \$68.5 billion for Overseas Contingency Operations.

While the recent 2-year budget deal is a helpful step in the right direction, a higher funding topline alone will not sufficiently address the challenges we face. Even with adequate resources, we must make difficult choices about roles and missions, force development, resource allocation, and investment priorities.

To that end, the National Defense Authorization Act advances four primary themes:

(1) First, the NDAA adjusts the budget request to align resources in a manner consistent with the priorities and principles of the NDS. After years of warning from senior defense leaders, the NDS addresses the degrading state of U.S. military capabilities vis-à-vis potential competitors. While there are many contributing factors—unstable budgets, sustained high operational tempo, as well as adversaries' increased investments in military capabilities—the committee believes that reversing this trend should be a high priority for the Department. To encourage these efforts, the NDAA recommends re-prioritizing funds for each of the Services toward requirements that directly support the NDS.

For example, the NDAA makes significant investments in research and development (R&D) to re-establish a credible combat advantage. The legislation increases R&D spending by \$1.2 billion, the majority of which is for science and technology spending with an emphasis on high priority emerging technologies like hypersonics, artificial intelligence, space, cyber, and directed energy. The NDAA boosts funding for promising new technologies and concepts such as distributed, low-cost, autonomous, and attritable systems in every domain—on land, in the air, on and under the sea, and in space and cyberspace. The NDAA also accelerates programs that enable operations in contested environments against peer competitors, among other NDS priorities, including accelerating the delivery of fixed-site cruise missile defense, increasing procurement of advanced munitions, and providing additional money for *Arleigh Burke*-class destroyers and *Virginia*-class submarines.

(2) Second, the NDAA provides one overarching reporting requirement to the Secretary of Defense: a list of detailed and specific questions regarding the roles, missions, and requirements of the military Services that the committee believes are raised by the NDS. The NDAA requires the Secretary to re-evaluate the highest priority missions for the DOD, the roles of the joint force in the performance of these missions, and the capabilities required to complete these missions. More specifically, the committee wants the Secretary to update the roles and missions of the military Services and to reassess how the NDS impacts end strength requirements, how the military will conduct the counterterrorism mission at a more sustainable cost to military readiness and resources, and how the focus on competing against peer adversaries and operating in contested environments impacts capability requirements and investments throughout the joint force. The committee believes that serious answers to these and other strategic questions will improve the Congress's ability to perform oversight of the DOD's future program and budget requests.

(3) Third, the NDAA includes reforms to the Office of the Secretary of Defense to support effective implementation of the NDS. The committee believes organizational change will be key to addressing systemic problems and positioning the Department to confront the challenges outlined in the NDS.

The ultimate success of the NDS will depend on implementation guided by strong civilian leadership determined to make the difficult choices required to align policies, authorities, organizations, requirements, and investments and informed by a realistic assessment of available resources. To help answer some of these big questions, the NDAA creates a new Assistant Secretary of Defense for Strategy, Plans, Assessments, Readiness, and Capabilities. By combining these strategically-oriented tasks in one office, the committee seeks to align the critical functions necessary to exert strong civilian leadership in the development of defense strategy and its translation into detailed policy to guide investments in necessary capabilities, readiness, and posture for the future joint force. The NDAA would re-designate the Under Secretary of Defense for Personnel and Readiness as the Under Secretary of Defense for Personnel and clarify its role as the Department's Chief Human Capital Officer.

The NDAA also furthers the reform of the Department's strategy development process that began with the statutory requirement for the NDS. It clarifies the three strategic guidance documents that support and implement the NDS (the Defense Planning Guidance, the Contingency Planning Guidance or Guidance for the Employment of the Force, and the Global Defense Posture Report), describes the elements to be included in each document, and requires the Secretary of Defense to submit each document to Congress. These documents set forth the Secretary's policy guidance as to what the Department should buy for the joint force, how the joint force is to be used, and where the joint force is to be postured around the world in order to execute the NDS. Receiving this strategic guidance is essential to congressional oversight efforts.

(4) Finally, the NDAA modernizes officer personnel management to bolster the effectiveness, recruitment, and retention of the all-volunteer force. The NDS acknowledges that the current joint force must change to meet the threat of renewed great power competition, calling for a "broad revision" of talent management principles among the Services to increase the lethality and adaptability of the force. The 38-year-old Defense Officer Personnel Management Act (Public Law 96-513) requires all military Services to manage their officer corps in the same general manner within specific constraints. By reforming this system, the NDAA will provide for flexibility in the careers of commissioned officers and better serve the demands of the modern force.

After the end of the Cold War, the United States enjoyed a robust comparative military advantage over other nations. However, through significant investment and military modernization, near-peer competitors eventually eroded America's military superiority. Meanwhile, decisions and policies we pursued—and those we did not—had consequences for our military: commitment to persistent counterterrorism operations, inadequate funding and budget uncertainty, and misplaced priorities and acquisition failures. Now, Rus-

sia and China present significant military challenges and could credibly threaten the security and prosperity of our country.

The National Defense Authorization Act for Fiscal Year 2019 will help the United States change course. It will recalibrate and refocus our efforts on readiness restoration, capabilities modernization, and concept development—all aimed at reasserting a quantitative and qualitative military advantage over potential adversaries. The recent National Defense Strategy provides a framework to address these challenges, and the NDAA builds on the changes outlined in the NDS while providing the DOD with the resources and authorities it needs to play its part in the national effort to restore American power in the new era of competition.

#### **SUMMARY OF DISCRETIONARY AUTHORIZATIONS AND BUDGET AUTHORITY IMPLICATION**

The administration's budget request for national defense discretionary programs within the jurisdiction of the Senate Committee on Armed Services for fiscal year 2019 was \$707.9 billion. Of this amount, \$617.1 billion was requested for base Department of Defense (DOD) programs, \$21.8 billion was requested for national security programs in the Department of Energy (DOE), and \$69.0 billion was requested for Overseas Contingency Operations (OCO).

The committee recommends an overall discretionary authorization of \$707.9 billion in fiscal year 2019, including \$617.6 billion for base DOD programs, \$21.7 billion for national security programs in the DOE, and \$68.5 billion for OCO.

The two tables preceding the detailed program adjustments in Division D of this bill summarize the direct discretionary authorizations in the committee recommendation and the equivalent budget authority levels for fiscal year 2019 defense programs. The first table summarizes the committee's recommended discretionary authorizations by appropriation account for fiscal year 2019 and compares these amounts to the request.

The second table summarizes the total budget authority implication for national defense by including national defense funding for items that are not in the jurisdiction of the defense committees or are already authorized.

#### **BUDGETARY EFFECTS OF THIS ACT (SEC. 4)**

The committee recommends a provision that would require that the budgetary effects of this Act be determined in accordance with the procedures established in the Statutory Pay-As-You-Go Act of 2010 (title I of Public Law 111-139).

## **DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS**

### **TITLE I—PROCUREMENT**

#### **Subtitle A—Authorization of Appropriations**

##### **Authorization of appropriations (sec. 101)**

The committee recommends a provision that would authorize the appropriations for procurement activities at the levels identified in section 4101 of division D of this Act.

#### **Subtitle B—Army Programs**

##### **Deployment by the Army of an interim cruise missile defense capability (sec. 111)**

The committee recommends a provision that would direct the Army to consider alternate short-term options to fill its cruise missile defense gap with existing systems and accelerate the Indirect Fire Protection Capability (IFPC) system independently of Integrated Air and Missile Defense Battle Command System (IBCS) deployment, leveraging entities such as the Defense Digital Service or the Defense Innovation Unit Experimental and report the determination of that short-term option to the congressional defense committees no later than 90 days after the enactment of this act. The committee recognizes the Army's commitment to missile defense, as shown through the recently employed cross-functional team dedicated to missile defense, and commends the Army's dedication to the mission, as demonstrated through the increased funding allocation to the Maneuver-Short-Range Air Defense program in the fiscal year 2019 budget request. However, the committee is deeply concerned about the paucity of land-based cruise missile defense capabilities and the Army's corresponding inability to adequately protect the joint force's fixed site systems, such as airfields and logistical depots. Integrated air and missile defense is critical for joint operations, but assets are not currently ready to counter an adversary's potential complex, integrated attack, thus leaving critical assets vulnerable. Furthermore, current air and missile defense forces fall dangerously short of being an effective and foundational defense for the kind of conflict outlined by the National Defense Strategy. While adversary air and missile threats become more capable, more complex, more powerful, and more numerous, U.S. air and missile defense capabilities have regressed. Specifically, the IBCS and IFPC systems have struggled to make real progress in a reasonable amount of time.

The IFPC system has experienced significant delays while employing a risky acquisition strategy. By attempting to leverage the

IBCS system for IFPC, the Army exposes itself to additional delays if certain testing milestones are not achieved on time. Furthermore, the IBCS system is already delayed 7 years and has expended about \$1.0 billion to date. The committee is not confident that the Army will successfully deliver an IBCS system on its current timeline due to the previous and recurring schedule delays. Any further delays will jeopardize timelines for delivery of integrated capabilities. Furthermore, the Government Accountability Office has stated that the IFPC Increment 2–1 Block 1 Program has struggled with integration of all four components—the Sentinel radar, the AIM–9X interceptor, the IBCS fire control, and the multi-mission launcher. While the committee appreciates the Army’s dedication to innovation within the IBCS framework, the Army is overextended in its IBCS effort and is therefore slowing the development and deployment of IFPC.

As outlined by the National Defense Strategy, cruise missile defense is a critical capability to defend against Russian and Chinese threats. Without this capability, the committee is concerned the U.S. Army will fail to successfully perform its mission to protect the joint force.

### **Subtitle C—Navy Programs**

#### **Multiyear procurement authority for F/A–18E/F Super Hornet and EA–18G aircraft program (sec. 121)**

The committee recommends a provision that would provide the Department of Defense authority to enter into multiyear procurement for F/A–18E/F and EA–18G aircraft for up to 3 years.

#### **Multiyear procurement authority for E–2D Advanced Hawkeye (AHE) aircraft program (sec. 122)**

The committee recommends a provision that would provide to the Department of Defense authority to enter into multiyear procurement for E–2D aircraft for up to 5 years.

#### **Extension of limitation on use of sole-source shipbuilding contracts for certain vessels (sec. 123)**

The committee recommends a provision that would extend to include fiscal year 2019 the prohibition on funds from being used to enter into, or prepare to enter into, sole source contracts for one or more Joint High Speed Vessels or Expeditionary Fast Transports (EPFs), unless the Secretary of the Navy submits to the congressional defense committees a certification and a report.

The committee notes that since 2011 the Navy requirement for EPFs has been 10 ships, which was most recently validated in December 2016. In 2013, this requirement was met with the procurement of the 10th EPF, and the Navy planned to shut down the production line.

Without an authorization or request in the President’s Budget, the Department of Defense Appropriations Act for Fiscal Year 2015 (Public Law 113–235) included procurement of an 11th EPF at a cost of \$200.0 million. Two more EPFs, the 12th and 13th, were added at a cost of \$225.0 million each in the Department of Defense Appropriations Act for Fiscal Year 2016 (Public Law 114–

113) and Department of Defense Appropriations Act for Fiscal Year 2018 (Public Law 115–141) respectively, without an authorization or request in the President’s Budget. The fiscal year 2015 and 2016 EPFs were awarded to a single shipbuilder, with no competition, using a sole source contract.

**Prohibition on availability of funds for Navy port waterborne security barriers (sec. 124)**

The committee recommends a provision that would prohibit funds from being used to procure new Navy port waterborne security barriers unless the Secretary of the Navy submits a waiver to the congressional defense committees.

The committee notes that the former Commander of Navy Installations Command, Vice Admiral Dixon Smith, testified before the committee on April 5, 2016, that current Navy maritime security barriers do “not meet the requirement for high-speed boats that could be used for a terrorist attack.”

Furthermore, the committee is aware of significant performance shortfalls of the current maritime security barriers that continue to result in unacceptable anti-terrorism and force protection gaps in at least one location.

The committee understands that the Navy is testing other Navy port waterborne security barriers, and Admiral Smith testified that these barriers will better be able to stop vessels. The committee further understands that these barriers may provide improved protection against low profile surface threats, capacity to withstand multiple coordinated attacks, and ability to endure environmental extremes.

The committee also notes that in a May 2016 report to the Congress, the Navy concluded that a commercial-off-the-shelf maritime security barrier “has the potential to provide greater operational capability compared to the current port security barriers against current and projected threats.” A business case analysis described in this report showed a significant decrease in sustainment costs for a new commercially available system.

The committee is concerned that the Navy has not set requirements, requested funding, or released a request for proposals to procure new Navy port waterborne security barriers.

Therefore, the committee urges the Navy to expeditiously set requirements, request funding, and release a request for proposals with full and open competition for new Navy port waterborne security barriers.

**Multiyear procurement authority for Standard Missile-6 (sec. 125)**

The committee recommends a provision authorizing the Secretary of the Navy to enter into multiyear contracts beginning in fiscal year 2019 for the procurement of 625 Standard Missile-6 guided missiles pending the Director of Cost Assessment and Program Evaluation confirmation of the Secretary of the Navy’s preliminary findings as required in subsection a of section 2306b of title 10, United States Code.

**Limitation on availability of funds for the Littoral Combat Ship (sec. 126)**

The committee recommends a provision that would prohibit funds from being used to exceed the total procurement quantity listed in revision five of the Littoral Combat Ship (LCS) acquisition strategy unless the Under Secretary of Defense for Acquisition and Sustainment submits to the congressional defense committees a certification.

The committee notes the Navy force structure assessment requirement and LCS acquisition strategy total procurement quantity of 32 LCS was met in fiscal year 2018. The committee further notes that in testimony before the Committee on Armed Services of the Senate on April 17, 2018, the joint statement of the Deputy Chief of Naval Operations for Warfare Systems and Assistant Secretary of the Navy for Research, Development and Acquisition stated, “The [budget request] includes one LCS in [fiscal year] 2019 to sustain the viability of the industrial base until the FFG(X) award in [fiscal year] 2020.”

Accordingly, the committee believes that before further LCS procurement, the Under Secretary of Defense for Acquisition and Sustainment should certify that such procurement: (1) Is in the national security interests of the United States; (2) Will not result in exceeding the low rate initial production quantity approved in the LCS acquisition strategy in effect at the time of the certification; and (3) Is necessary to maintain a full and open competition for the guided missile frigate (FFG(X)) with a single source award in fiscal year 2020.

**Nuclear refueling of aircraft carriers (sec. 127)**

The committee recommends a provision that would authorize the procurement of naval nuclear reactor power units and associated reactor components for the nuclear refueling of the following aircraft carriers: USS *John C. Stennis* (CVN-74), USS *Harry S. Truman* (CVN-75), USS *Ronald Reagan* (CVN-76), and USS *George H.W. Bush* (CVN-77).

The committee notes that the procurement lead time for some nuclear components required to conduct a nuclear refueling precedes the authorization for the associated aircraft carrier refueling by several years.

Accordingly, pursuant to section 7314a of title 10, United States Code, as added by section 1014 of this Act, in order to maintain appropriate oversight of program execution of the nuclear refueling of aircraft carriers, the committee recommends the authorizations contained in this provision.

**Limitation on funding for Amphibious Assault Vehicle Product Improvement Program (sec. 128)**

The committee recommends a provision that would limit twenty-five percent of funds authorized for Amphibious Assault Vehicles product improvement program (AAV PIP) from being obligated or expended until the Secretary of Defense provides the required report identified in the section titled Report on the Highest-priority roles and missions of the Department of Defense and the Armed Forces.

**Subtitle D—Air Force Programs****Prohibition on availability of funds for retirement of E-8 JSTARS aircraft (sec. 141)**

The committee recommends a provision that would prohibit the availability of funds to retire, or prepare to retire, any E-8 Joint Surveillance Target Attack Radar System (JSTARS) aircraft.

As part of its fiscal year 2019 budget request, the Air Force is seeking to cancel the JSTARS recapitalization program and retire three existing JSTARS aircraft. The Air Force's rationale is that current assessments demonstrate a recapitalized JSTARS aircraft will not be survivable in a highly contested environment during conflict. In its place, the Air Force is seeking to invest in a portfolio of new ideas and emerging capabilities to fulfill the Ground Moving Target Indicator (GMTI) mission.

The committee agrees with the National Defense Strategy on the need to focus on peer adversaries and is supportive of the Air Force's efforts to move to an Advanced Battle Management System. However, the committee is concerned with the Air Force's plan to divest current capability before its replacement technology is developed and operational. While the Air Force's plan for 2030 and beyond is aspirational with no guarantee of success, it is willing to make decisive, irreversible decisions about the retirement of current capabilities. The committee is concerned that this dynamic creates the potential, if not the likelihood, of extended capability gaps should the Air Force's ambitious plan not meet reality, either in time or feasibility.

The committee believes the Air Force must ensure a robust capability to execute the GMTI and airborne battle management missions throughout the transition to its planned Advanced Battle Management System.

**B-52H aircraft system modernization report (sec. 142)**

The committee recommends a provision requiring a long-term modernization plan for the B-52H aircraft due 180 days after the enactment of this Act.

The Air Force has stated it intends to keep the B-52H flying through 2040, at which time the newest aircraft, having left the assembly line in 1962, will be 78 years old. The committee recognizes the value of the B-52 and is supportive of the Department of Defense's efforts to continue to employ its unique capabilities for the foreseeable future.

However, the committee is cognizant that, given the age of the B-52, any modernization effort must consider the whole system. For example, because the radar is integrated into the electronic warfare system, the radar cannot simply be modernized without taking into account the characteristics of the future electronic warfare system. The committee believes it is imperative that the Air Force take a holistic approach to the modernization of the B-52 to ensure its continued relevance and effectiveness.

**Repeal of funding restriction for EC-130H Compass Call Recapitalization Program and review of program acceleration opportunities (sec. 143)**

The committee recommends a provision that would repeal Section 131 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328; 13 Stat. 2037) and require the Secretary of the Air Force to provide periodic reports to the congressional defense committees on the status of the EC-130H Compass Call recapitalization program.

**Subtitle E—Defense-Wide, Joint, and Multiservice Matters**

**Multiyear procurement authority for C-130J aircraft program (sec. 151)**

The committee recommends a provision that would provide the Department of Defense authority to enter into multiyear procurement for C-130J aircraft for up to 5 years.

**Quarterly updates on the F-35 Joint Strike Fighter program (sec. 152)**

The committee recommends a provision that would require the Under Secretary of Defense for Acquisition and Sustainment to provide the congressional defense committees quarterly updates on the F-35 Joint Strike Fighter (JSF) program.

The committee notes the F-35 program is facing an inflection point in its lifecycle. The committee is encouraged that the program is at long last on the cusp of completing the System Development and Demonstration (SDD) phase but continues to have a number of concerns. The sustainment, modification, and modernization of the F-35s will be a continuous challenge for the Department of Defense (DOD) for decades to come. The committee believes if the right foundation is not established today, prior to a steep ramp in production, the viability of the program will be put into doubt, depriving our warfighters of urgently-needed capabilities necessary to deter and, if necessary, defeat any adversary.

The F-35 sustainment enterprise is struggling to provide the Air Force, Navy, and Marine Corps an affordable strategy that meets their operational needs. As the number of fielded aircraft nearly triples in the next 3 years, the challenge will grow exponentially. The committee is particularly concerned by the Not Mission Capable-Supply (NMC-S) rates of the F-35. In part, the high NMC-S rates are due to a lack of adequate repair capacity. The Government Accountability Office (GAO) published a report on October 26, 2017, titled “F-35 Aircraft Sustainment: DoD Needs to Address Challenges Affecting Readiness and Cost Transparency” (GAO-18-75), that stated the DOD “does not have enough capacity to repair F-35 aircraft parts because the establishment of repair capabilities at the military depots is 6 years behind schedule.” The report goes on to say, “Program officials in part attributed these delays to the military services not providing enough funding for depot requirements; however, service officials told [the GAO] the program office did not clearly identify some depot requirements in a timely manner necessary for the services to fund those requirements.”

The GAO cited five key challenges facing the Department: (1) Limited repair capacity at depots; (2) Spare parts shortages; (3) Undefined technical data needs; (4) Unfunded intermediate-level maintenance capabilities; and (5) Delays in the Autonomic Logistics Information System (ALIS) development and uncertain funding.

While production of aircraft has begun to rapidly increase, development of the baseline Block 3F configuration has continued. There are over 250 aircraft now delivered and fielded, despite the fact that Initial Operational Test and Evaluation (IOT&E) will not even begin until the fall of 2018. The committee notes the continued costs associated with the concurrency of development and production. In June 2017, the Joint Program Office (JPO) estimated the cost to upgrade the fielded fleet of 266 aircraft to the Block 3F System Development and Demonstration standard at \$1.6 billion. In January 2018, the JPO estimated the cost to upgrade the older Lot 2–8 aircraft to Block 4 will be approximately \$16.0 million per aircraft and the newer Lot 9–10 aircraft will be approximately \$13.0 million.

The committee is concerned by the enormous retrofit costs required to provide the warfighters the capabilities they need from the F–35. The committee supports upgrading as many F–35s as possible to the most advanced configuration in order to, most importantly, provide the best capability to the warfighter but also to reduce the complication of maintaining and sustaining multiple configurations of three different aircraft. Elsewhere in this bill, the committee provides additional funding for the modifications of F–35 aircraft. However, the committee is concerned the modification costs and lack of industrial capacity for parts will limit the Department's ability to achieve a rationalized and maximally capable F–35 fleet.

Despite the clear and obvious issues, the committee is not convinced the program office or Services are adequately addressing the problems, including providing adequate funding for spare parts and to stand up depot component repair capabilities and purchase the necessary lay-in material, both of which are years behind schedule.

The committee urges the Services to urgently prioritize funding spare parts and depot repair capability. Elsewhere in this legislation, the committee recommends funding increases to accelerate procurement of spare parts and the establishment of depot component repair capability.

At the same time, the sustainment enterprise is struggling to keep up with the number of fielded aircraft and modification costs continue to rise, the JPO is about to embark on the Block 4 modernization program, known as Continuous Capability Development and Delivery (C2D2). An enormously expensive and complicated effort in its own right, C2D2 seeks to rapidly field advanced capabilities to the warfighter under an agile software development construct. While supportive of moving to a more agile and rapid capability fielding cycle, the committee remains concerned with the ability of the Department to execute in an affordable and efficient manner on a program as large and complicated as the F–35.

The committee has been encouraged by the renewed commitment to transparency and communication with the Congress and looks

forward to continuing to work together to ensure the success of the F-35 program. In order to facilitate this collaboration, the committee believes it prudent for the Congress to be regularly updated on the status and direction of this vital program.

**Authority to procure additional polar-class icebreakers (sec. 153)**

The committee recommends a provision that would amend section 122 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) by striking subsections (a) and (b), as well as providing authority to enter into a contract or contracts for up to six polar-class icebreakers.

**Budget Items**

**Army**

**Interim cruise missile defense capability for the Army**

The budget request for the Army included \$145.6 million in line number 3 of Missile Procurement, Army (MPA), for the Indirect Fire Protection Capability (IFPC) Increment 2-Intercept weapon system.

The committee believes this is insufficient to deliver the critical need for cruise missile defenses of fixed assets and to ensure any delays that emanate from the IFPC weapon system or the Integrated Air and Missile Defense Battle Command System.

Therefore, the committee recommends an increase of \$500.0 million in line number 3 of MPA for procurement of an interim cruise missile defense capability for the Army, which equates to about two batteries for such a capability.

**Army Tactical Missile System**

The budget request included \$221.7 million in line number 16 in Missile Procurement, Army (MPA), for Army Tactical Missile System (ATACMS) modifications.

The total request is for 402 ATACMS; however, the maximum capacity for ATACMS is 320.

Therefore, committee recommends a decrease of \$80.0 million in line number 16 in MPA to align total quantity to 320.

**Armored Multi-Purpose Vehicle**

The budget request included of \$480.0 million in line number 2 of Weapons and Tracked Combat Vehicles, Army (W&TCV) for the procurement of 131 Armored Multi-Purpose Vehicles (AMPV).

The committee recognizes the importance of the Army's efforts to modernize and to be better prepared to execute the National Defense Strategy. The Army has made clear its modernization priorities in order to rapidly build capabilities needed for combined arms maneuver against a peer adversary. The committee understands that the AMPV program continues to work through performance challenges of key components.

Therefore, the committee recommends a decrease of \$100.0 million in line number 2 W&TCV for the procurement of the AMPV.

**Stryker modification**

The budget request included \$287.5 million in line number 4 of Weapons and Tracked Combat Vehicles, Army (WTCV), for Stryker modifications.

The Army has requested a transfer of \$149.4 from line number 4 to line number 5 of WTCV for Stryker upgrades.

Therefore, the committee recommends a decrease of \$149.4 million in line number 4 of WTCV.

**Stryker upgrade**

The budget request included \$21.9 million in line number 5 of Weapons and Tracked Combat Vehicles, Army (WTCV), for Stryker upgrades.

The Army has requested a transfer of \$149.4 from line number 4 to line number 5 of WTCV for Stryker upgrades.

Therefore, the committee recommends an increase of \$149.4 million in line number 5 of WTCV.

**Bradley Program (Modifications)**

The budget request included \$625.0 million in line number 6 of Weapons and Tracked Combat Vehicles, Army (W&TCV), for the procurement of Bradley fighting vehicles.

The committee recognizes the importance of the Army's efforts to modernize and to be better prepared to execute the National Defense Strategy. The Army has made clear its modernization priorities in order to rapidly build capabilities needed for combined arms maneuver against a peer adversary.

Therefore, the committee recommends a decrease of \$324.0 million in line number 6 W&TCV for the procurement of the Bradley.

**Paladin Integrated Management**

The budget request included \$351.8 million in line number 8 of Weapons and Tracked Combat Vehicles, Army (WTCV), for the procurement of 30 Paladin Integrated Management (PIM) sets.

The committee recognizes the importance of the Army's efforts to modernize and to be better prepared to execute the National Defense Strategy. The Army has made clear its modernization priorities in order to rapidly build capabilities needed for combined arms maneuver against a peer adversary.

Accordingly, the committee recommends an increase of \$110.0 million in line number 8 WTCV for the procurement of the PIM.

**Small caliber reduction**

The budget request included \$2.2 billion for Procurement of Ammunition, Army (PAA), of which \$41.8 million was for LI 0132E00700, CTG 5.56 mm. The committee notes the increase in the appropriations omnibus for fiscal year 18 and therefore a decrease of \$6.7 million in PAA 0132E00700 due to forward financing.

**Army ammunition reduction**

The budget request included \$2.2 billion for Procurement of Ammunition, Army (PAA), of which \$184.0 million was for LI 8750E27501, Artillery, Fuze, Precision Guidance Kit (PGK).

The committee is very supportive of the PGK program, its combat performance to date, and the Army's goal to stockpile PGK rounds to reach its total Army munitions requirements. However, given the Army's plans to replace current PGK rounds with anti-jam capable PGK rounds in the near future and the requested three-fold increase compared to fiscal year 2018, the requested funding increase in fiscal year 2019 could be better aligned for other readiness priorities.

Accordingly, the committee recommends a decrease of \$100.0 million in PAA to LI 8750E27501 for PGK.

#### **Joint Light Tactical Vehicle**

The budget request included \$1.32 billion in line number 6 of Other Procurement, Army (OPA), for the procurement of 3,390 Joint Light Tactical Vehicles (JLTV).

The committee recognizes the importance of the Army's efforts to modernize and to be better prepared to execute the National Defense Strategy. The Army has made clear its modernization priorities in order to rapidly build capabilities needed for combined arms maneuver against a peer adversary.

Therefore, the committee recommends a decrease of \$250.0 million in line number 6 OPA for the procurement of the JLTV.

#### **U.S. Southern Command unfunded priorities increase**

The budget request included \$8.0 billion for Other Procurement, Army, of which \$46.0 million was for line number 71, Modification of In Service Equipment (Intelligence Support).

The committee notes that United States Southern Command identified intelligence, surveillance, and reconnaissance as an unfunded priority.

Accordingly, the committee recommends an increase of \$1.8 million to line number 71, Modification of In Service Equipment (Intelligence Support).

#### **Army automated data processing equipment**

The budget request included \$8.0 billion in Other Procurement, Army (OPA), of which \$201.9 million was for line number 112, automated data processing equipment.

The committee notes that the Army is moving towards adoption of more commercial information technology (IT) solutions, including commercial cloud and networking capabilities and consolidating more IT purchases with other Department of Defense elements and services. As the Army consolidates IT purchases and develops integrated personnel systems in other budget lines, the committee expects to see a decrease in this budget line.

Accordingly, the committee recommends a decrease of \$15.0 million in OPA for line number 112, automated data processing equipment.

## Navy

### **F-35C Joint Strike Fighter**

The budget request included \$1.1 billion in line number 3 of Aircraft Procurement, Navy (APN), for procurement of nine F-35C aircraft.

The committee supports the F-35 Joint Strike Fighter and the delivery of its unique capabilities to our warfighters as quickly as reasonably possible. However, the committee remains concerned with the state of the F-35 sustainment enterprise and its ability to efficiently and affordably bear the rapidly increasing demands upon it.

The committee believes the enterprise is behind, particularly in regards to spare parts and depot component repair capacity. If the program does not allow the sustainment enterprise to catch up to the currently fielded and soon to be fielded aircraft, maintenance will continue to fall further behind its needed capability and capacity and will ultimately reduce the number of aircraft the Department of Defense is able to procure, sustain, and upgrade.

The Navy and Joint Program Office's belated appreciation for the need for a shipboard intermediate maintenance capability has further challenged the ability to effectively and efficiently sustain the Department of the Navy's F-35s going forward.

The committee believes it is prudent to establish a solid sustainment base before the steep ramp of production aircraft overwhelms the enterprise's ability to sustain them. Elsewhere in this legislation, the committee seeks to increase funding for F-35 spares, modifications, and depot repair capability.

Accordingly, the committee recommends a decrease of \$121.0 million and one aircraft in line number 3 of APN.

### **E-2D Advanced Hawkeye**

The budget request included \$742.7 million in line number 16 of Aviation Procurement, Navy (APN), for the procurement of four E-2D Advanced Hawkeye aircraft.

The committee recognizes the vital contributions of the E-2D Advanced Hawkeye to present and future carrier air wing operations. As the airborne battle manager, the E-2D is the linchpin for carrier strike group concepts of operations, including Naval Integrated Fire Control—Counter Air.

The committee is supportive of accelerating capabilities that enhance our abilities to deter and, if necessary, defeat any peer or near-peer adversary. The committee also recognizes the critical need to provide our weapons schools with the latest equipment to ensure the most relevant and effective tactics are being developed and disseminated.

Therefore, the committee recommends an increase of \$175.0 million in line number 16 of APN for the procurement of one additional E-2D aircraft. This item was included on the Chief of Naval Operations' unfunded priorities list.

### **USMC OA-X light attack procurement**

The budget request included no funds in Aircraft Procurement, Navy (APN), for the acquisition of a fleet of light attack aircraft.

The committee believes that, as the nation's middle-weight expeditionary force-in-readiness, the Marine Corps could benefit from a fleet of low-cost, light attack aircraft that would require minimal work to develop. These aircraft could conduct counterterrorism operations, perform close air support (CAS), and other missions in permissive and semi-permissive environments such as those where employing low altitude rotary-wing CAS platforms has proven prohibitive. These aircraft would also help season pilots to mitigate the potential for a shortfall in the future. The low cost per flight hour, simplicity, and tailored capabilities of a light attack platform could also provide a significant increase in the amount of support provided to Marine, joint force, and allied ground units. It may also help provide an affordable path to a light attack capability for allies, partners, and friends with limited financial resources.

The committee is concerned that the Marine Corps' future tactical aviation foundation rests almost solely on 5th generation fighters such as the F-35B and C variants. However, the bulk of Marine Corps aviation missions executed in the past 15 years revolve around providing CAS and non-traditional intelligence, surveillance and reconnaissance (NT-ISR) flights. While the F-35 offers unique capabilities against a peer competitor, the committee questions the value of using such an exquisite platform, with its high cost per flight hour, short time-on station, and low readiness rates, to perform CAS and NT-ISR missions in support of enduring requirements in Afghanistan, Iraq, Syria, on the African continent and for other limited contingency operations. Additionally, using a light attack platform to meet the majority of Marine CAS and NT-ISR requirements reduces the wear on expensive, low-observable aircraft and enables those aircrews to focus on their primary operational missions in high-end contested and degraded operations against potential peer adversaries.

Therefore, the committee recommends an increase of \$100.0 million in APN, line number 71, for a total of \$100.0 million, for acquisition of a light attack aircraft fleet. This effort will be informed by the Air Force's Light Attack Capabilities Experimentation Campaign conducted in fiscal year 2017 to evaluate capabilities for armed reconnaissance, strike control and reconnaissance, combat search and rescue, CAS, and other combat missions.

#### **C-40 aircraft**

The budget request included \$206.0 million in line number 18 of Aircraft Procurement, Navy (APN), for procurement of two C-40 aircraft.

The committee notes that two C-40 aircraft were included in the Department of Defense Appropriations Act for Fiscal Year 2018 (Public Law 115-141), and therefore the requested aircraft are excess to need.

Accordingly, the committee recommends a decrease of \$206.0 million and two aircraft in line 18 of APN.

### **USMC Medium-Altitude Long-Endurance Unmanned Aircraft System procurement**

The budget request included no funds in Aircraft Procurement, Navy (APN) for the acquisition of Medium-Altitude Long-Endurance (MALE) Group 5 drones.

The committee understands that the Marine Corps uses the RQ-21A Blackjack Unmanned Aircraft System (UAS) to provide Intelligence, Surveillance and Reconnaissance (ISR) for its Ground Combat Element. Numerous Urgent Universal Need Statements from operational commanders have repeatedly pointed out serious shortfalls in the range, payload, survivability, and overall effectiveness of the RQ-21 system. The proposed solution to many of these shortfalls is an, as yet undetermined, replacement system called the Marine Air Ground Task Force Unmanned Expeditionary Capability (MUX) system. This system's Initial Operational Capability date has shifted from 2015, as reported in the Marine Corps Aviation Plan in 2005, to sometime after 2026, with a Full Operational Capability forecasted for 2035 or later.

The committee is concerned that the Marine Corps' lack of reliable capability and capacity in the UAS field leaves them vulnerable to enemy action and less effective at completing their assigned missions over the next decade or longer. The committee also notes that the Marine Corps is currently operating MQ-9 Reaper UAS under contract to support operations in Afghanistan. The committee believes that a MALE Group 5 type UAS platform offers the best combination of capabilities available currently to support maneuver elements on the ground. Such platforms are able to perform ISR, Signals Intelligence, Electronic Warfare, fire support and communications relay tasks and have proven range, survivability, and reliability characteristics from years of use supporting ground and special operations units. Procurement of a Group 5 type MALE UAS solves all of the capability and performance gaps of the RQ-21 and will help the Marine Corps to more precisely refine its requirements for the future MUX program. Additionally, the experience gained in MALE UAS operations and fire support execution as well as the ISR acquired by using such a system will help to train and educate a new generation of Marine UAS operators and planners, who will then be ready to transition smoothly to a future MUX system.

Therefore, the committee recommends an increase of \$100.0 million in APN, line number 72, for a total of \$100.0 million, for acquisition of a Group 5 MALE UAS fleet.

### **EA-18G cognitive electronic warfare**

The budget request included \$1.2 billion in line number 30 of Aircraft Procurement, Navy (APN), for procurement of modifications to all models of the F/A-18 aircraft.

The committee recognizes the growing importance of electronic warfare and its critical role in any fight with a peer or near-peer adversary. The committee believes it is imperative the United States maintains relevant and effective electronic warfare capabilities. Moving forward, the ability to sense and react to the electromagnetic spectrum will be key to success in any conflict.

Therefore, the committee recommends an increase of \$13.9 million in line number 30 of APN for Reactive Electronic Attack Measures technology for the EA-18G Growler. This item was included on the Chief of Naval Operations' unfunded priorities list.

#### **Adaptive Radar Countermeasure**

The budget request included \$166.3 million in line number 49 of Aircraft Procurement, Navy (APN), for procurement of common electronic countermeasures equipment.

The committee understands that the survivability of U.S. strike fighters will clearly be essential to the success of any conflict with a peer or near-peer adversary.

Therefore, the committee recommends an increase of \$25.0 million in line number 49 of APN for Adaptive Radar Countermeasure (ARC). This item was included on the Chief of Naval Operations' unfunded priorities list.

#### **F-35B modifications**

The budget request included \$36.6 million in line number 59 of Aircraft Procurement, Navy (APN), F-35B STOVL Series, for procurement of modifications to F-35B aircraft.

The Department of Defense continues to deal with the ramifications of the concurrency of development and production of the F-35. As the number of fielded aircraft grows while development is still ongoing, the costs continue to rise. Concurrency will continue to be a logistical and financial burden as the program moves on to the Block 4 modernization program, known as Continuous Capability Development and Delivery. According to recent estimates, the cost of upgrading aircraft up to the Block 4 configuration will be from \$12.0 to \$16.0 million per jet, adding to the already considerable affordability issues facing the program.

The committee supports upgrading as many F-35s as possible to the most advanced configuration in order to, most importantly, provide the best capability to the warfighter, but also reduce the complication of maintaining and sustaining multiple configurations of three different aircraft.

Therefore, the committee recommends an increase of \$33.5 million in line number 59 of APN for F-35B modifications.

#### **F-35C modifications**

The budget request included \$21.2 million in line number 60 of Aircraft Procurement, Navy (APN), F-35 CV Series, for procurement of modifications to F-35C aircraft.

The Department of Defense continues to deal with the ramifications of the concurrency of development and production of the F-35. As the number of fielded aircraft grows while development is still ongoing, the costs continue to rise. Concurrency will continue to be a logistical and financial burden as the program moves on to the Block 4 modernization program, known as Continuous Capability Development and Delivery. According to recent estimates, the cost of upgrading aircraft up to the Block 4 configuration will be from \$12.0 to \$16.0 million per jet, adding to the already considerable affordability issues facing the program.

The committee supports upgrading as many F-35s as possible to the most advanced configuration in order to, most importantly, provide the best capability to the warfighter, but also reduce the complication of maintaining and sustaining multiple configurations of three different aircraft.

Therefore, the committee recommends an increase of \$5.0 million in line number 60 of APN for F-35C modifications.

### **F-35 spares and repair parts**

The budget request included \$1.8 billion in line number 64 of Aircraft Procurement, Navy (APN), for procurement of aircraft spares and repair parts.

The committee remains concerned by the readiness rates of the F-35 Joint Strike Fighter. A particularly concerning trend is the increase in the percentage of aircraft unable to fly while awaiting replacement parts due to inadequate supply support, known as the Not Mission Capable—Supply (NMC-S) rate. As the Director of Operational Test and Evaluation (DOT&E) notes in the January 2018 annual report, “Concurrency of production and development, lower-than-expected reliability for parts, inadequate fault isolation, and early program decisions to not adequately fund procurement of spares have contributed to the NMC-S rate.”

Given this situation, which will be exacerbated as production ramps up steeply in the coming years, the committee is perplexed by the Services’ combined decrease of \$546.4 million for F-35 spares between fiscal years 2020 and 2022. While the Department of Defense claims the cuts are due to “process improvements by Services to meet Departmental readiness efficiency goals in military spending,” the committee is unaware of any such process improvements that would resolve a NMC-S rate that is nearly double the goal, let alone that would warrant cutting a half billion dollars in spare parts. Should such process improvements exist, the committee strongly urges the Services to share them, as they would clearly bring immense benefit to the entire Department.

The committee believes the F-35 program urgently needs to increase the supply of spare parts.

Therefore, the committee recommends an increase of \$30.0 million for F-35B spares and repair parts and \$20.0 million F-35C spares and repair parts for a total increase of \$50.0 million in line number 64 of APN for aircraft spares and repair parts.

### **Sidewinder**

The budget request included \$77.9 million in line number 5 of Weapons Procurement, Navy (WPN), for the Sidewinder missile.

The committee notes that after several years of assuming risk in the procurement of munitions, the current level of munitions inventory is low. In an attempt to address this, the Department of Defense has requested many munitions be funded at the maximum production capacity. However, there are several munitions that are not funded at maximum capacity within the budget request.

Therefore, the committee recommends an increase of \$45.0 million in line number 5 of WPN for an additional 58 missiles. This increases procurement to the maximum capacity for Sidewinder. This was on the Chief of Naval Operations’ unfunded priorities list.

**Long range anti-ship missile**

The budget request included \$81.2 million in line number 17 of Weapons Procurement, Navy (WPN), for the long range anti-ship missile.

The committee notes that after several years of assuming risk in the procurement of munitions, the current level of munitions inventory is low. In an attempt to address this, the Department of Defense has requested many munitions be funded at the maximum production capacity. However, there are several munitions that are not funded at maximum capacity within the budget request. The long range anti-ship missile is a highly-capable system that is critical for the warfight.

The committee recommends an increase of \$30.0 million in line number 17 of WPN for an additional 10 missiles. This increases procurement to the maximum capacity for the long range anti-ship missile. This was on the Chief of Naval Operations' unfunded priorities list.

**Harpoon block II**

The budget request included \$14.8 million in line number 20 of Weapons Procurement, Navy (WPN), for the Harpoon missile.

The committee notes that after several years of assuming risk in the procurement of munitions the current level of munitions inventory is low. In an attempt to address this, the Department of Defense has requested many munitions be funded at the maximum production capacity. However, there are several munitions that are not funded at maximum capacity within the budget request.

The committee recommends an increase of \$12.0 million in line number 20 of WPN for an additional 48 missiles. This increases procurement to the maximum capacity for the Harpoon block II and accelerates meeting total requirement in fiscal year 2020 instead of 2021. This was on the Chief of Naval Operations' unfunded priorities list.

**Advanced Anti-Radiation Guided Missile**

The budget request included \$188.0 million in line number 21 in Weapons Procurement, Navy (WPN), for Harm Mods.

The committee notes that the Navy is currently in full rate production for the Advanced Anti-Radiation Guided Missile (AARGM) and requested to purchase 257 missiles in fiscal year 2019. The committee also notes that the Director of Operational Test and Evaluation (DOT&E) recently stated that the AARGM Block I was "not adequate to support an evaluation of operational effectiveness or survivability." Furthermore, DOT&E stated that the AARGM Block I "provides limited employment capability against advanced threat surface-to-air radar systems." Given the directive by new National Defense Strategy to prioritize competition against near-peer adversaries, the committee believes that the Navy must re-evaluate the AARGM program of record. The committee believes the Navy should seek a solution that will be operationally effective against advanced threats surface-to-air radar systems and deprioritize investments on programs that are not.

Therefore, the committee recommends a decrease of \$113.9 million in line number 21 in WPN, which reduces the quantity by 200 missiles.

#### **MK48 torpedoes**

The budget request included \$92.6 million in line number 27 of Weapons Procurement, Navy (WPN), for the MK-48 torpedo.

The committee notes that after several years of assuming risk in the procurement of munitions, the current level of munitions inventory is low. In an attempt to address this, the Department of Defense has requested many munitions be funded at the maximum production capacity. However, there are several munitions that are not funded at maximum capacity within the budget request.

The committee recommends an increase of \$11.0 million in line number 27 of WPN for an additional five torpedoes. This increases procurement to the maximum capacity for the MK-48. This was on the Chief of Naval Operations' unfunded priorities list.

#### **LCS module weapons**

The budget request included \$11.4 million in line number 39 of Weapons Procurement, Navy (WPN), for procurement of Littoral Combat Ship module weapons, including 90 Longbow Hellfire missiles.

The committee notes the Navy, which has procured 134 Longbow Hellfire Missiles for the surface-to-surface missile module (SSMM) program in previous years, plans to complete developmental testing, initial operational test and evaluation, and declare initial operational capability in fiscal year 2019.

Therefore, the committee recommends a decrease of \$6.0 million to reduce missile quantities until operational testing is completed.

#### **Advanced low-cost munitions ordnance**

The budget request included \$33.6 million in line number 10 of Procurement of Ammunition, Navy & Marine Corps (PANMC), of which \$19.5 million was for the procurement of the advanced low-cost munitions ordnance (ALAMO) rounds.

The committee believes the request to purchase 1,500 rounds is ahead of need as testing has not been complete.

Therefore, the committee recommends a decrease of \$13.0 million in line number 10 of PANMC to reduce the procurement of ALAMO by 1,000 rounds. The remaining 500 rounds should be used to complete operational testing.

#### **Virginia-class submarine advance procurement**

The budget request included \$2.8 billion in line number 5 of Shipbuilding and Conversion, Navy (SCN), for *Virginia*-class submarine advance procurement.

The committee recommends an additional \$250.0 million for the Secretary of the Navy to use for: (1) Economic order quantity for the fiscal year 2019 through 2023 multiyear *Virginia*-class submarine procurement, which may include the addition of a third submarine in both fiscal years 2022 and 2023; or (2) To expand second and third tier contractors in the submarine industrial base to support planned increased production requirements.

If the Secretary pursues option (2), consistent with the statement of managers accompanying the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), the Secretary shall notify the congressional defense committees within 30 days of obligating funds for such purpose of the obligation date, contractor name or names, location, description of the shortfall to be addressed, actions to be undertaken, desired end state, usable end items to be procured, period of performance, dollar amount, projected associated savings including business case analysis if applicable, contract name, and contract number.

The committee believes that utilizing economic order quantity procurement, procuring additional submarines, and expanding the capabilities of the supplier base should lead to greater cost savings and improved efficiency as production increases to meet the *Columbia*-class schedule and higher requirement for attack submarines in the Navy's latest Force Structure Assessment.

Therefore, the committee recommends an increase of \$250.0 million in line number 5 of SCN for *Virginia*-class submarine advance procurement.

#### **DDG–1000**

The budget request included \$271.0 million in line number 8 of Shipbuilding and Conversion, Navy (SCN), for procurement of the DDG–1000 program.

The committee notes these funds are requested as subsequent year full funding. The committee is unaware of incremental funding authority for this program in fiscal year 2019.

Therefore, the committee recommends a decrease of \$271.0 million in line number 8 of SCN and transfer of these funds to line number 28 for completion of the prior year shipbuilding program.

#### **Arleigh Burke-class destroyers**

The budget request included \$5.3 billion in line number 9 of Shipbuilding and Conversion, Navy (SCN), for *Arleigh Burke*-class destroyer procurement.

The committee notes the budget request includes procurement of three *Arleigh Burke*-class destroyers, which is one additional destroyer in fiscal year 2019 as compared to last year's request. The committee further notes the unit costs of the fiscal year 2019 destroyers slightly increased. The committee believes a higher procurement rate should decrease unit costs.

Therefore, the committee recommends a decrease of \$27.5 million in line number 9 of SCN.

#### **Arleigh Burke-class destroyer advance procurement**

The budget request included \$391.9 million in line number 10 of Shipbuilding and Conversion, Navy (SCN), for *Arleigh Burke*-class destroyer advance procurement.

The committee notes the Navy future years defense program includes procurement of two *Arleigh Burke*-class destroyers in fiscal year 2020, which would be procured using a multiyear procurement contract. The committee understands that advance procurement of long lead time material could reduce component costs and enable optimal ship construction intervals.

Therefore, the committee recommends an increase of \$250.0 million in line number 10 of SCN.

### **Littoral Combat Ship**

The budget request included \$749.2 million in line number 11 of Shipbuilding and Conversion, Navy (SCN), for procurement of one Littoral Combat Ship (LCS).

The committee notes the one LCS requested in fiscal year 2019 is the last ship of the class. Accordingly, the committee recommends adjusting the plans and other cost categories to align with the end of production.

Therefore, the committee recommends a decrease of \$70.0 million in line number 11 of SCN. Additionally, the committee requests the Secretary of the Navy establish a separate SCN line number for the Frigate (FFG(X)) in the fiscal year 2020 budget request.

### **LPD-class amphibious transport ship advance procurement**

The budget request included no funding in line number 12 of Shipbuilding and Conversion, Navy (SCN), for procurement or advance procurement of LPD-class amphibious transport ships.

The committee notes the Navy has identified LPD-30, which was authorized and appropriated in fiscal year 2018, as the first Flight II LPD. The committee believes sufficient design maturity and cost estimate precision have been achieved to award a multiyear procurement contract for Flight II LPD-class ships, which will be procured in fiscal years 2020 through 2024.

The committee further notes that the Secretary of the Navy and Commandant of the Marine Corps testified on April 19, 2018, before the Committee on Armed Services of the Senate that they support the addition of the Vertical Launch System to Flight II LPD-class ships. The committee believes this increased capability merits serious consideration, including the applicable concepts of operation, requirements, and ship design changes.

Therefore, the committee recommends an increase of \$650.0 million in line number 12 of SCN for advance procurement for Flight II LPD-class ships, which the Secretary of the Navy may use for: (1) Economic order quantity procurement associated with a multiyear procurement contract or contracts awarded pursuant to section 2306b of title 10, United States Code; and/or (2) Advance procurement of the amphibious transport ship designated LPD-31.

### **Outfitting**

The budget request included \$634.0 million in line number 21 of Shipbuilding and Conversion, Navy (SCN), for outfitting.

Based on planned delivery dates, the committee notes post-delivery funding is early to need for CVN-79, DDG-1002, and SSN-793. The committee also notes unjustified outfitting cost growth for LCS-11, LCS-13, LCS-14, LCS-15, LCS-16, LCS-17, LCS-18, LCS-19, LCS-20, LCS-22, DDG-119, and DDG-121.

Therefore, the committee recommends a decrease of \$72.0 million in line number 21 of SCN.

**Service craft**

The budget request included \$72.1 million in line number 23 of Shipbuilding and Conversion, Navy (SCN), for service craft.

The committee understands the current Navy Surface Warfare Officer (SWO) candidate training curriculum is comprised of primarily classroom and simulator training methods. The committee believes SWO candidates lack sufficient at-sea training before reporting to their first ships. The committee is concerned that the lack of practical at-sea experience before reporting to their first ships may result in SWOs having gaps in their foundational safety, seamanship, and navigation knowledge, skills, and experience. The committee has previously encouraged the Navy to utilize Navy Yard Patrol (YP) craft for SWO candidate training in the Senate report accompanying S. 2943 (S. Rept. 114–255) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328). Additionally, the 2017 Comprehensive Review of Surface Force Incidents directed an evaluation of the use of YP craft in all officer accession programs, including the feasibility of expanding YP craft use.

Since at least 1975, YP craft have been used by the Navy to train naval officer candidates. Currently, the Navy maintains 24 YP craft, based in Annapolis, Maryland, to provide realistic, at-sea training in basic to advanced navigation and seamanship. Of these 24 craft, Navy officials have stated six YP 676 class craft are slated for near-term disposal, 12 YP 676 class craft are only able to conduct local operations, and six YP 703 class craft can conduct out-of-area training with a range of 1,680 nautical miles and 40 personnel embarked.

The Navy conducts annual Atlantic Patrol summer training cruises, known as LANTPAT, with the six YP 703 class craft, which provide four-week cruises for approximately 400 Naval Academy midshipmen and international students with port visits in locations such as New York, Rhode Island, and Massachusetts. The Navy plans to expand this effort by having 80 Naval Reserve Officer Training Corps midshipmen take part in LANTPAT cruises in both 2018 and 2019. The committee understands that, if additional craft were available, potentially all of the approximately 260 NROTC midshipmen who will become SWOs could take part in a LANTPAT cruise. The additional craft could also increase LANTPAT participation of Naval Academy midshipmen, as well as new SWO candidate graduates of the Officer Candidate School.

In order to increase LANTPAT training opportunities for SWO candidates from all accession sources as soon as possible, the committee believes that, at a minimum, the Navy should replace the six YP 676 class craft slated for disposal with new YP 703 craft that incorporate modernization, training, and habitability improvements derived from lessons learned with existing YP 703 craft.

The committee urges the Secretary of the Navy to release a request for proposals for the detail design and construction of upgraded YP 703 class craft not later than fiscal year 2019, with an award for the first such craft not later than fiscal year 2020. Based on YP 703 class craft actual procurement costs, the committee believes the design, non-recurring engineering, government support,

and construction costs for the first upgraded YP 703 class craft should not exceed \$25.0 million.

Therefore, the committee recommends an increase of \$25.0 million in line number 23 of SCN.

### **Completion of prior year shipbuilding programs**

The budget request included \$207.1 million in line number 28 of Shipbuilding and Conversion, Navy (SCN), for completion of prior year shipbuilding programs.

The committee notes \$271.0 million are requested in line number 8 as subsequent year full funding for the DDG-1000 program. The committee is unaware of incremental funding authority for this program in fiscal year 2019.

The committee further notes the budget request in line number 28 funds completion of prior year shipbuilding programs, including cost overruns for seven Littoral Combat Ships, three *Arleigh Burke*-class destroyers, three Ship to Shore Connectors, CVN-78, and LHA-7.

Therefore, the committee recommends an increase of \$271.0 million in line number 28 of SCN and the transfer of these funds from line number 8.

### **Cable ship**

The budget request included no funding in line number 29 of Shipbuilding and Conversion, Navy (SCN), for a cable ship.

The committee recommends an increase of \$250.0 million in line number 29 of SCN for procurement of one cable ship and directs the Secretary of the Navy to utilize an existing United States or foreign design, with modifications he deems necessary, to maximize affordability and expedite delivery.

### **Other navigation equipment**

The budget request included \$63.3 million in line number 4 of Other Procurement, Navy (OPN), for procurement of other navigation equipment.

The committee notes the 2017 Comprehensive Review of Surface Force Incidents recommended accelerating the transition to Electronic Chart Display and Information System—Navy (ECDIS-N) versions 9.4 and greater on all ships.

Therefore, the committee recommends an increase of \$10.0 million in line number 4 of OPN to accelerate the installation of ECDIS-N upgrades.

### **DDG-1000 class support equipment**

The budget request included \$89.7 million in line number 16 of Other Procurement, Navy (OPN), for procurement of DDG-1000 class support equipment.

The committee notes the fiscal year 2019 request increased \$38.4 million above last year's planned request for fiscal year 2019 of \$51.3 million. The committee further notes the Navy attributes this \$38.4 million increase to funding activities that overlap with those funded in the DDG-1000 research and development program element (PE 0204202N), which increased \$40.8 million above last year's planned request for fiscal year 2019.

Therefore, the committee recommends a decrease of \$38.4 million in line number 16 of OPN.

#### **Items less than \$5 million**

The budget request included \$126.9 million in line number 22 of Other Procurement, Navy (OPN), for procurement of items less than \$5.0 million.

The committee notes this funding includes \$32.9 million for CVN-78 in-service requirements. However, the committee lacks sufficient budget justification (e.g., P-3a exhibit) to support this request.

Therefore, the committee recommends a decrease of \$25.0 million in line number 22 of OPN and requests the Navy consolidate *Ford*-class OPN requests in a new line number.

#### **LCS mine countermeasures mission modules**

The budget request included \$124.1 million in line number 32 of Other Procurement, Navy (OPN), for procurement of Littoral Combat Ship (LCS) mine countermeasures mission modules.

The committee notes \$19.3 million in line number 52 would procure Knifefish and Unmanned Influence Sweep System training assets for LCS mine countermeasures mission modules.

The committee further notes \$8.6 million in line number 53 would procure a Coastal Battlefield Reconnaissance and Analysis airborne mine countermeasures system block one training asset for LCS mine countermeasures mission modules.

Therefore, the committee recommends an increase of \$27.9 million and discontinuing use of line numbers 52 and 53 of OPN for procurement of systems associated with LCS mine countermeasures mission modules.

#### **LCS anti-submarine warfare mission modules**

The budget request included \$57.3 million in line number 33 of Other Procurement, Navy (OPN), for procurement of Littoral Combat Ship (LCS) anti-submarine warfare mission modules.

The committee recommends procuring one Escort Mission Module (EMM) in fiscal year 2019 and delaying procurement at a rate of two EMMs per year until operational testing is completed for both LCS variants, which is planned for fiscal year 2020.

Therefore, the committee recommends a decrease of \$18.0 million in line number 33 of OPN.

#### **LCS surface warfare mission modules**

The budget request included \$26.0 million in line number 34 of Other Procurement, Navy (OPN), for procurement of Littoral Combat Ship (LCS) surface warfare mission modules.

The committee notes the surface-to-surface missile module (SSMM) program plans to complete developmental testing, initial operational test and evaluation, declare initial operational capability (IOC), and procure 2 additional SSMMs in fiscal year 2019.

Therefore, the committee recommends a decrease of \$11.5 million in line number 34 of OPN to limit procurement to a single SSMM until IOC is declared.

**Surface ship torpedo defense**

The budget request included \$11.3 million in line number 42 of Other Procurement, Navy (OPN), for surface ship torpedo defense programs.

The committee notes a delay in the AN/SLQ-25E contract award.

Therefore, the committee recommends a decrease of \$5.0 million in line number 42 of OPN.

Additionally, the committee is concerned by the termination of the Torpedo Warning System (TWS), which addressed a critical capability gap. Accordingly, not later than January 1, 2019, the committee directs the Chief of Naval Operations to provide the congressional defense committees with a report on the specific capability gap or gaps that the TWS was rapidly fielded to address, the performance of the TWS in addressing such gap or gaps, the warfighting risk that will be accepted without the TWS deployed, and the Navy's plans to address the specific capability gap or gaps without the TWS deployed.

**Cooperative Engagement Capability**

The budget request included \$44.2 million in line number 48 of Other Procurement, Navy (OPN), for procurement of Cooperative Engagement Capability.

The committee notes Common Array Block pre-production unit schedule delays.

Therefore, the committee recommends a decrease of \$6.0 million in line number 48 of OPN.

**Minesweeping system replacement**

The budget request included \$35.7 million in line number 52 of Other Procurement, Navy (OPN), for procurement of minesweeping replacement systems.

The committee notes \$19.3 million of this funding would procure Knifefish and Unmanned Influence Sweep System training assets for Littoral Combat Ship (LCS) mine countermeasures mission modules.

Therefore, the committee recommends a decrease of \$19.3 million in line number 52 of OPN, transfer of these funds to line number 32, and discontinuing use of line number 52 for procurement of systems associated with LCS mine countermeasures mission modules.

**Shallow water mine countermeasures**

The budget request included \$8.6 million in line number 53 of Other Procurement, Navy (OPN), for procurement of shallow water mine countermeasures systems.

The committee notes this funding would procure a Coastal Battlefield Reconnaissance and Analysis airborne mine countermeasures system block one training asset for Littoral Combat Ship (LCS) mine countermeasures mission modules.

Therefore, the committee recommends a decrease of \$8.6 million in line number 53 of OPN, transfer of these funds to line number 32, and discontinuing use of line number 53 for procurement of systems associated with LCS mine countermeasures mission modules.

**Next Generation Surface Search Radar**

The budget request included \$148.4 million in line number 71 of Other Procurement, Navy (OPN), for procurement of items less than \$5.0 million.

The committee notes \$58.4 million of this request would fund the Next Generation Surface Search Radar (NGSSR) program, including non-recurring engineering, procurement of 43 units, and installation. The committee further notes installations are scheduled to begin in the second quarter of fiscal year 2020.

Therefore, the committee recommends a decrease of \$5.4 million in line number 71 of OPN due to installation funding ahead of need. Additionally, while recognizing fielding NGSSR is a priority for the Navy, the committee is concerned by the cost and schedule risk posed by the concurrent nature of the acquisition strategy, specifically concurrent NGSSR engineering, testing, shipboard integration, and procurement of 43 NGSSRs in fiscal year 2019.

Additionally, the committee understands that NGSSR will be the primary navigation radar replacement. The committee believes the NGSSR should include the capability to record and retain radar data for investigative and other purposes.

Accordingly, the committee directs the Secretary of the Navy to submit a report to the congressional defense committees not later than October 1, 2018, on the capability of surface navigation radars to record and retain radar data for investigative and other purposes. This report shall include: (1) The current capability and capacity of surface navigation radars (e.g., AN/SPS-73) to record and retain radar data; (2) The current methods used by the Navy to reconstruct surface navigation radar data for investigative and other purposes; (3) The planned NGSSR capability and capacity to record and retain radar data; and (4) Once the NGSSR is fielded, the methods planned to be used by the Navy to reconstruct surface navigation radar data for investigative and other purposes.

**Cryptologic communications equipment**

The budget request included \$14.2 million in line number 82 of Other Procurement, Navy (OPN), for procurement of cryptologic communications equipment.

The committee notes that U.S. Southern Command identified intelligence, surveillance, and reconnaissance as an unfunded priority with a specific need for increased cryptologic carry-on collection capability.

Therefore, the committee recommends an increase of \$2.8 million in line number 82 of OPN.

**Sonobuoys**

The budget request included \$199.0 million in line number 88 of Other Procurement, Navy (OPN), for the procurement of sonobuoys.

The committee notes greater than expected sonobuoy expenditures in fiscal year 2018 resulted in the Chief of Naval Operations requesting procurement of additional sonobuoys as a fiscal year 2019 unfunded priority.

Therefore, the committee recommends an increase of \$36.0 million in line number 88 of OPN.

### **Navy port waterborne security barriers**

The budget request included \$175.4 million in line number 129 of Other Procurement, Navy (OPN), for the procurement of physical security equipment.

The committee notes the former Commander of Navy Installations Command, Vice Admiral Dixon Smith, testified before the Committee on Armed Services of the Senate on April 5, 2016, that current Navy maritime security barriers do “not meet the requirement for high-speed boats that could be used for a terrorist attack.”

Furthermore, the committee is aware of significant performance shortfalls of the current maritime security barriers that continue to result in unacceptable anti-terrorism and force protection gaps in at least one location.

The committee is concerned that the Navy has not set requirements, requested funding, or released a request for proposals to procure new Navy port waterborne security barriers.

Accordingly, the committee urges the Navy to expeditiously set requirements, request funding, and release a request for proposals with full and open competition for new Navy port waterborne security barriers.

Therefore, the committee recommends an increase of \$20.0 million in line number 129 of OPN.

### **Amphibious Assault Vehicle Survivability Upgrade**

The budget request included \$156.2 million in line number 1 of Procurement, Marine Corps (PMC), for the procurement of Amphibious Assault Vehicle (AAV) Survivability Upgrade Program (SUP) armored vehicles.

The committee understands that the AAV SUP will produce marginal improvements in the vehicle’s overall survivability and that few of the proposed enhancements address threats the vehicle may face in conflict against a peer adversary. The AAV is a decades-old platform with legacy amphibious and combat capabilities that do not meet the needs of modern Marine amphibious forcible entry operations. Rather than continue to invest in a vehicle that, even in upgraded form, will not provide adequate maneuverability, survivability or ship-to-shore performance the committee believes these funds would be better used elsewhere to support modernization initiatives across the force.

Therefore, the committee recommends a decrease of \$78.1 million in line number 1 of PMC.

### **Command post systems**

The budget request included \$124.8 million in line number 32 of Procurement, Marine Corps (PMC), for the procurement of command post systems.

The committee notes that the majority of this budget line is dedicated to procuring Networking On The Move (NOTM) systems for air and ground platforms. The NOTM system represents one method to achieve long range data and voice communications, however it has operational performance issues and is not considered a Low Probability of Detection or Low Probability of Intercept system.

Therefore, the committee recommends a decrease of \$25.0 million in line number 32 of PMC.

### **Training devices**

The budget request included \$52.0 million in line number 48 of Procurement, Marine Corps (PMC), for the procurement of training devices.

This budget line includes funding for training devices and simulators for obsolete equipment to include the Amphibious Assault Vehicle, Light Armored Vehicle, M16A2, M249 SAW, MP5, M240G, Mk-153 SMAW, and other systems.

Therefore, the committee recommends a decrease of \$10.4 million in line number 48 of PMC.

## **Air Force**

### **F-35A Joint Strike Fighter**

The budget request included \$4.3 billion in line number 1 of Aircraft Procurement, Air Force (APAF), for procurement of 48 F-35A aircraft.

The committee supports the F-35 Joint Strike Fighter and delivery of its unique capabilities to our warfighters as quickly as reasonably possible. However, the committee remains concerned with the state of the F-35 sustainment enterprise and its ability to bear the rapidly increasing demands upon it efficiently and affordably. The committee believes the enterprise is behind, particularly in regards to spare parts and depot component repair capacity. If the program does not allow the sustainment enterprise to catch up to the currently fielded and soon to be fielded aircraft, sustainment capability will continue to fall farther and further behind its needed capability and capacity, which will ultimately reduce the number of aircraft the Department of Defense is able to procure, sustain, and upgrade.

The committee believes it is prudent to establish a solid sustainment base before the steep ramp of production aircraft overwhelms the enterprise's ability to sustain them. Elsewhere in this legislation, the committee seeks to increase funding for F-35 spares, modifications, and depot repair capability.

Accordingly, the committee recommends an increase of \$25.0 million for depot repair capability standup and a decrease of \$92.5 million, or one aircraft, for a total decrease of \$67.5 million in line number 1 of APAF.

### **OA-X light attack aircraft**

The budget request included no funds in Aircraft Procurement, Air Force (APAF), for the acquisition of a fleet of light attack aircraft.

The recently published National Defense Strategy (NDS) clearly states the need to conduct operations in permissive environments with lower-cost platforms and concepts of operations than is being done currently, both to be more fiscally efficient and to free our more capable, multi-role aircraft assets to focus on rebuilding readiness and deterring peer competitors. The NDS additionally places a strong emphasis on the need to enhance partnerships with our allies throughout the world. The committee strongly believes that a light attack fleet is ideally suited to meet both of these strategic demands.

The committee has been encouraged by the Air Force's moves towards pursuing the acquisition of a fleet of light attack aircraft, including a \$2.4 billion wedge in the out years of the future years defense program. However, the committee believes that the Air Force continues to move slower than is warranted or than the speed at which senior leadership proclaims they want to move.

Therefore, the committee recommends an increase of \$350.0 million in APAF, line number 18, for the acquisition of light attack aircraft and their associated long lead material.

### **KC-46A Pegasus**

The budget request included \$2.6 billion in line number 4 of Aircraft Procurement, Air Force (APAF), for procurement of 15 KC-46 tanker aircraft.

The committee remains supportive of the KC-46 tanker but continues to be frustrated by the repeated delays to achieving required certification and unforeseen technical challenges that continue to plague the program. Over the seven years since the program contract was awarded in February 2011, key schedule dates have slipped later and later, in some cases more than three years. The Government Accountability Office (GAO) published a report on April 18, 2018, KC-46 Modernization: Program Cost is Stable, but Schedule May Be Further Delayed," which states that "the program updated its delivery schedule in 2017 to allow Boeing to delay delivery of the first 18 fully capable aircraft from August 2017 to October 2018 / 14 months. A schedule risk assessment, as well as GAO's analysis, however projects that deliveries could slip to May 2019, 21 months from the original schedule, if risks are not mitigated." With military certification testing, receiver certification, and resolution of Category 1 discrepancies still to be completed, the committee remains unconvinced that there will not be further delays to the program.

While attention has been focused on the delivery of the first aircraft, the committee notes that first delivery is simply the first step to bringing capability to the warfighter. Successful completion of full receiver aircraft certification, Initial Operational Test and Evaluation, delivery of the required assets available (to include wing air refueling pod sets), and a positive full rate production decision will be the true guideposts.

Additionally, while the committee understands the need to be flexible as a program encounters delays, the committee is disappointed the Air Force has, on more than one occasion, changed the criteria the contractor needs to meet before first delivery. The committee expects the Air Force to hold the contractor to the contracted agreements, and should the contract be breached, pursue appropriate consideration.

Meanwhile, production of aircraft continues apace, with nearly 40 aircraft in some phase of production or modification. As the April 18, 2018, GAO report notes, "Based on the updated schedule, Boeing will be producing 49 aircraft, or about 27 percent of the total aircraft the Air Force will buy, before developmental testing is complete." While the contractor is responsible for paying for any required modifications, the concurrency of production and development will impact delivering capability to the Air Force.

Additionally, the Government Accountability Office identified \$102.7 million of funding for KC-46 interim contractor support that is early to need.

Therefore, the committee recommends a decrease of \$145.2 million, or one KC-46 aircraft, and \$102.7 million for interim contractor support for a total decrease of \$247.9 million in line number 4 of APAF.

### **MQ-9**

The budget request included \$221.7 million in line number 17 of Aircraft Procurement, Air Force (APAF), for procurement of 29 MQ-9 aircraft.

The committee understands the Air Force is moving toward establishing an Advanced Battle Management System concept. As part of this effort, the Air Force intends to emplace a Ground Moving Target Indicator (GMTI) capability on a number of its MQ-9 Reaper fleet to provide GMTI in low-threat areas. The committee is supportive of providing more capabilities to its MQ-9 fleet and of executing operations in permissive environments in a more fiscally efficient manner.

However, the committee is concerned that the Air Force's plan to use MQ-9s for GMTI missions without increasing capacity will overtask an already heavily utilized asset.

Accordingly, the committee recommends an increase of \$120.0 million in line 17 of APAF for six additional MQ-9 aircraft in order to accelerate the Air Force's Advanced Battle Management System.

### **B-52**

The budget request included \$105.5 million in line number 21 of Aircraft Procurement, Air Force (APAF), for B-52 modifications.

The Air Force has requested a transfer of \$14.8 million from this line to Research, Development, Test & Evaluation (RDT&E), Air Force.

Therefore, the committee recommends a decrease of \$14.8 million in line number 21 of APAF.

### **Long range anti-ship missile certification on the B-52**

The budget request included \$105.5 million in line number 21 in Aircraft Procurement, Air Force (APAF), for B-52.

The B-52 will be certified to carry the Joint Air-to-Surface Standoff Missile Extended Range (JASSM-ER). The long range anti-ship missile (LRASM) has the same physical configuration as the JASSM-ER. The Air Force is procuring 50 LRASMs. Currently, the LRASM is certified to be carried on the B-1. However, given the Air Force plans to eventually retire the B-1, and the critical capability and expensive nature of the LRASM, the committee requires the Air Force certify the B-52 to carry the LRASM.

Therefore, the committee recommends an increase of \$10.0 million in line number 21 in APAF to certify the LRASM on the B-52.

### **A-10 replacement wing program**

The budget request included \$109.1 million in line number 23 of Aircraft Procurement, Air Force (APAF), for modifications to the A-

10 aircraft, including \$79.2 million for the wing replacement program.

The committee recommends an increase of \$65.0 million in line number 23 of APAF for the A-10 wing replacement program.

#### **F-35A modifications**

The budget request included \$247.3 million in line number 29 of Aircraft Procurement, Air Force (APAF), for procurement of modifications to F-35A aircraft.

The committee supports upgrading as many F-35s as possible to the most advanced configuration in order to, most importantly, provide the best capability to the warfighter, but also reduce the complication of maintaining and sustaining multiple configurations of three different aircraft.

Therefore, the committee recommends an increase of \$50.0 million in line number 29 of APAF for F-35A modifications.

#### **C-130 propulsion upgrade**

The budget request included \$22.1 million in line number 50 of Aircraft Procurement, Air Force (APAF), for modifications to the legacy C-130 and Special Mission C-130 aircraft.

The committee notes that the budget request did not include any funding for the C-130H T56 Series 3.5 Engine Enhancement Packages (EEPs) in this or any other line.

The committee has been encouraged by the results of the Air Force's testing of the T56 Series 3.5 engine upgrade and the resulting performance and fuel efficiency gains it brings.

Therefore, the committee recommends an increase of \$74.0 million in line number 50 of APAF for C-130H T56 Series 3.5 EEPs.

#### **Joint Surveillance Target Attack Radar System**

The budget request included \$22.9 million in line number 59 of Aircraft Procurement, Air Force (APAF), for modifications to the E-8C Joint Surveillance Target Attack Radar System (JSTARS).

The committee understands the Air Force is seeking to retire three JSTARS aircraft in fiscal year 2019, forgo recapitalizing the JSTARS fleet, and move towards an Advanced Battle Management System (ABMS). The committee supports the Air Force's move toward establishing advanced capabilities and concepts of operations to enhance effectiveness in any potential conflict with a peer or near-peer adversary.

However, the committee is concerned that the Air Force is divesting proven capability before its planned replacement is matured, let alone fielded. The committee is particularly concerned that the Air Force's plan to divest the JSTARS fleet by the mid-2020s will leave a significant capability gap in the mid- to late-2020s should implementation of ABMS be delayed or prove unfeasible.

The committee believes the JSTARS aircraft remains a critical capability for our warfighters in the near- to mid-term. In order to ensure its relevance and effectiveness as an interim capability as the Air Force transitions to an ABMS, JSTARS requires upgrades, including to its central computer.

Therefore, the committee recommends an increase of \$25.0 million in line 59 of APAF for JSTARS central computer upgrade design.

#### **F-35A spares and repair parts**

The budget request included \$956.4 million in line number 70 of Aircraft Procurement, Air Force (APAF), for procurement of aircraft spares and repair parts.

The committee remains concerned by the readiness rates of the F-35 Joint Strike Fighter. A particularly concerning trend is the increase in the percentage of aircraft unable to fly while awaiting replacement parts due to inadequate supply support, known as the Not Mission Capable—Supply (NMC-S) rate. As the Office of the Director of Operational Test and Evaluation (DOT&E) notes in the January 2018, DOT&E annual report, “Concurrency of production and development, lower-than-expected reliability for parts, inadequate fault isolation, and early program decisions to not adequately fund procurement of spares have contributed to the NMC-S rate.”

Given this situation, which will be exacerbated as production ramps up steeply in the coming years, the committee is perplexed by the Services’ combined decrease of \$546.4 million for F-35 spares between fiscal years 2020 and 2022. While the Department of Defense claims the cuts are due to “process improvements by Services to meet Departmental readiness efficiency goals in military spending,” the committee is unaware of any such process improvements that would resolve a NMC-S rate that is nearly double the goal, let alone that would warrant cutting more than a half billion dollars in spare parts. Should such process improvements exist, the committee strongly urges the Services to share them, as they would clearly bring immense benefit to the entire Department.

The committee believes the F-35 program urgently needs to increase the supply of spare parts. Therefore, the committee recommends an increase of \$50.0 million in line number 70 of APAF for F-35A spares and repair parts.

#### **Air Force long range anti-ship missile**

The budget request included \$44.2 million in line number 3 of Missile Procurement, Air Force (MPAF), for the long range anti-ship missile.

The committee notes that, after several years of assuming risk in the procurement of munitions, the current level of munitions inventory is low. In an attempt to address this problem, the Department of Defense has requested funding for many munitions at the maximum production capacity. However, there are several munitions that are not funded at maximum capacity within the budget request. The long range anti-ship missile is a highly capable system that is critical for achieving the goals set forth in the National Defense Strategy. However, the Air Force budget request reduced the quantity of this critical munition for fiscal year 2019 from 15 to 12. The Air Force intends to complete the procurement of this missile in fiscal year 2019 terminating the program with a total procurement of 47 missiles. However, the total requirement of the long range anti-ship missile for the Air Force is 50 missiles.

Therefore, the committee recommends an increase of \$10.2 million in line number 3 of MPAF for an additional three missiles. This increases procurement to the maximum capacity for the long range anti-ship missile and achieves the Air Force's requirement of 50 munitions. In addition, given the critical nature of this missile, the committee believes that 50 missiles is insufficient. The Air Force shall re-examine the total program requirement of the long range anti-ship missile in light of the advancing capabilities of near-peer adversaries.

#### **Small Diameter Bomb II**

The budget request included \$100.9 million in line number 8 in Missile Procurement, Air Force (MPAF), for Small Diameter Bomb II.

The committee recommends a decrease of \$8.0 million in line number 8 in MPAF to realign unit price to \$104,000 per weapon.

#### **Cargo and utility vehicles**

The budget request included \$42.7 million in line number 4 for Cargo and Utility Vehicles in Other Procurement, Air Force (OPAF).

As part of its strategic approach for addressing long-term strategic competition with China and Russia, the National Defense Strategy (NDS) calls for building a more lethal force, including investments in forward force maneuver, posture resilience, and resilient and agile logistics. According to the NDS, the objectives of these investments are to ensure that U.S. forces can "deploy, survive, operate, maneuver, and regenerate in all domains while under attack" and conduct "logistics sustainment while under persistent multi-domain attack." Meeting these objectives will require a transition "from large, centralized, unhardened infrastructure to smaller, dispersed, resilient, adaptive basing that include active and passive defenses" as well as an emphasis on "prepositioned forward stocks and munitions, strategic mobility assets," and "distributed logistics and maintenance."

Consistent with the priorities set forth in the National Defense Strategy, the committee has fully supported resiliency efforts such as the prepositioning of European Contingency Air Operations Sets Deployable Airbase Systems (DABS), which is part of the European Deterrence Initiative, to complement and enhance the theater-wide response capability of the U.S. Air Force in Europe.

However, the committee is concerned that the appropriate level of investment in similar resiliency efforts in the Indo-Pacific region has not materialized. U.S. force posture in the Indo-Pacific region remains heavily concentrated in Northeast Asia within range of China's advanced arsenal of ballistic and cruise missiles, posing a significant risk to forward-stationed forces, to the ability of the Joint Force to execute the contingency plans of the Department of Defense, and to the credibility of U.S. deterrence in the Indo-Pacific region.

As a result, Admiral Harry Harris, Commander, U.S. Pacific Command (PACOM), identified force posture initiatives focused on resiliency as critical requirements in his letter to the committee of

February 22, 2018, concerning PACOM's unfunded priority list and in his testimony to the committee on March 15, 2018.

Therefore, the committee supports the procurement of seven DABS in fiscal year 2019 to be prepositioned forward in the PACOM area of responsibility in order to support the priorities of the National Defense Strategy and PACOM's "resiliency" and "agile logistics" force posture initiatives as well as to enhance the credible combat power of U.S. forces in the Indo-Pacific region.

Accordingly, the committee recommends an increase of \$7.2 million in line number 4 for Cargo and Utility Vehicles in OPAF.

#### **Security and tactical vehicles**

The budget request included \$1.2 million in line number 6 for Security and Tactical Vehicles in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$2.7 million in line number 6 for Security and Tactical Vehicles in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

#### **Special purpose vehicles**

The budget request included \$43.0 million in line number 7 for Special Purpose Vehicles in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$10.7 million in line number 7 for Special Purpose Vehicles in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

#### **Fire fighting/crash rescue vehicles**

The budget request included \$23.3 million in line number 8 for Fire Fighting/Crash Rescue Vehicles in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$9.0 million in line number 8 for Fire Fighting/Crash Rescue Vehicles in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

#### **Materials handling vehicles**

The budget request included \$11.5 million in line number 9 for Materials Handling Vehicles in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$19.8 million in line number 9 for Materials Handling Vehicles in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

### **Runway snow removal and cleaning equipment**

The budget request included \$37.6 million in line number 10 for Runway Snow Removal and Cleaning Equipment in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$2.8 million in line number 10 for Runway Snow Removal and Cleaning Equipment in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

### **Air Force physical security system**

The budget request included \$159.3 million in line number 29 for Air Force Physical Security System in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$2.0 million in line number 29 for Air Force Physical Security System in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

### **Base maintenance and support equipment**

The budget request included \$24.0 million in line number 56 for Base Maintenance and Support Equipment in Other Procurement, Air Force (OPAF). The committee recommends an increase of \$24.0 million in line number 56 for Base Maintenance and Support Equipment in OPAF.

This increase would support the procurement of seven Deployable Airbase Systems in fiscal year 2019 to be prepositioned forward in the U.S. Pacific Command area of responsibility as further explained elsewhere in this report.

## **Defense Wide**

### **Joint Service Provider**

The budget request included \$107.2 million in line number 16 of Joint Service Provider, Defense Information Systems Agency.

The committee notes that the budget request represents significant growth from prior years, and that the Department of Defense has set up a Reform Management Group specifically focused on reducing costs in the shared services information technology area.

Therefore, the committee recommends a decrease of \$19.5 million in line number 16 of Joint Service Provider, Defense Information Systems Agency.

## **Items of Special Interest**

### **Aircraft carrier acquisition**

The Department of Defense has been able to achieve program efficiencies and cost-savings by using multiyear and block buy contracting with many weapons programs, to include shipbuilding. Section 2306b of title 10, United States Code, sets forth criteria for requesting and evaluating multiyear contracting proposals. Al-

though similar criteria for block buy authorities are not codified, the committee expects the Department to conduct rigorous analysis of proposals and provide that analysis to the Congress, and that the Department's analysis will show a sound business case with substantial savings from committing the government to a longer term contract.

Earlier this year, the Navy issued a request for proposal soliciting information on a potential block buy to acquire two Ford-class aircraft carriers (CVN-80 and CVN-81). The committee will review any information that the Navy provides related to such an approach as consideration of the National Defense Authorization Act for Fiscal Year 2019 continues.

### **Army M4 Carbine Forward Extended Rails**

In fiscal year 2018, the committee directed the Army to evaluate the need for upgrading the M4 Carbine legacy rail with the Special Operations Command (SOCOM) free-float extended rails. In response, the Army conducted a Solider Enhancement Program (SEP) evaluation and published the results in December 2017. The Limited User Evaluation (LUE) demonstrated promising results as compared to the Army's legacy rail. While the committee supports the Army's modernization strategy that calls for developing and fielding the Next Generation Squad Automatic Weapon (NGSAW) before developing and fielding the Next Generation Soldier Weapon (NGSW), the committee remains concerned that the Army is not planning to make modest upgrades to the M4 Carbine until the NGSAW and NGSW can be fielded. The committee is aware that soldier demand remains high for free-float, extended rails, and the Army has included funding for free-float extended rails from fiscal year 2021 through fiscal year 2023. The committee recommends the Army assess the cost-effectiveness and efficiency of accelerating the free-float extended rail program to retrofit the M4A1 rifle as part of a bridging strategy until the NGSAW and NGSW is fielded.

### **Avoiding future work stoppages on EC-130H Compass Call Recapitalization**

The committee supports the Air Force's efforts to recapitalize the aging EC-130H Compass Call fleet with the EC-37 type aircraft. The committee notes that before it can carry on with the transition plan, the Department of Defense must first comply with the related provisions in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) and the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91). While the committee notes that Department has submitted the certification required by the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), delays in satisfying the requirement has led to a work stoppage on the program lasting at least six weeks. The committee is concerned about the potential for further work stoppages should the Secretary of the Air Force fail to make a timely determination that the EC-37B has a high likelihood of meeting combatant requirements, as required by the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328). The committee encourages the Secretary of the Air Force to make

a timely determination for this requirement to avoid further program delays and cost overruns.

Therefore, the committee directs the Secretary of the Air Force, not more than 60 days after the determination required by the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) is made, to provide a briefing to the congressional defense committees on the Compass Call transition plan. This plan should include:

- (1) Courses of action to accelerate the recapitalization of the EC–130H fleet and Baseline 4 development and deployment for incoming EC–37 aircraft;
  - (a) attendant timelines for each course of action;
  - (b) cost estimates for each course of action; and
- (2) Recommended course of action and a plan to manage both fleets while supporting combatant commander requirements.

### **B–2 modernization programs**

The committee is aware that, as noted in the Department of Defense’s fiscal year 2018 budget request, “modern communications are key enablers for the B–2 in the anti-access/area denial battlespace and directly enhance lethality and force multiplication.” The committee notes that the Department did not request any funding in its fiscal year 2019 budget for the B–2 Advanced Extremely High Frequency (AEHF) Satellite Communications program and has not proposed an alternative secure communications solution to replace the current communications suite.

The B–2 is currently the only stealth, long-range, penetrating bomber in the Air Force inventory. While the committee fully supports the recapitalization of the bomber fleet with at least 100 next-generation B–21 bombers, the committee is concerned about capability and capacity gaps in the near-to-mid-term.

Therefore, the committee directs the Secretary of the Air Force to submit a report to the congressional defense committees by February 28, 2019, on potential line-of-sight and beyond line-of-sight communications upgrades for the B–2 that would provide the capabilities required for the B–2 to perform its critical strike missions in anti-access/area denial environments.

Additionally, the report should consider solutions that would enable automated transfer of data to the B–2 and enable the aircraft to operate in a networked fashion with other elements of the long-range strike family of systems and other Air Force and Joint systems. The report should provide estimated modernization costs and timelines, consider opportunities to exploit capabilities developed for other programs, and take into account timelines for introduction of future systems that will provide similar capabilities.

### **B–52 re-engining**

The committee recognizes the value and mission capabilities of the B–52 and supports platform modernization, specifically the effort to re-engine the fleet. The committee further recognizes the advances in engine performance and efficiency since the B–52’s current TF–33 engines were fielded. Accordingly, the committee supports efforts to accelerate fielding of the B–52 engine replacement

in order to maximize the benefits of increased efficiency over the B-52's remaining life.

#### **Briefing on tactical wheeled vehicle acquisition plans**

The committee notes the decreased funding profile for the Army's Family of Medium Tactical Vehicle program (FMTV), the Palletized Load System Extended Service Program (PLS ESP), and the Heavy Expanded Mobility Tactical Truck Extended Service Program (HEMTT ESP) over the future years defense program (FYDP). Predictable funding helps support minimum sustaining rates, and it avoids production breaks. In turn, this benefits Army readiness and modernization plans.

Therefore, the committee directs the Secretary of the Army to brief the committee not later than September 30, 2018, on the Army's procurement strategy for the FMTV program as well as the programs for HEMTT ESP and PLS ESP. The briefing should address how the proposed funding strategies are likely to impact the tactical wheeled vehicle industrial base, modernization and readiness goals, as well as surge capacity and future acquisition needs.

#### **CH-53K Heavy Lift Replacement**

The Navy's MH-53E helicopter's primary mission of providing airborne mine countermeasures is more important than ever, as the Navy faces an ever increasing number of threats across the maritime domain today, including anti-ship mines that are widespread, deadly, and difficult to locate.

Since the committee has been concerned about maintaining mine countermeasures capability, the committee has recommended legislation that has continued to delay the retirements of the MCM-1 mine countermeasures ships and the MH-53E helicopters until the Secretary of the Navy can identify a replacement capability and the necessary quantity of such systems that will meet all combatant commander mine countermeasures operational requirements.

In testimony before the Seapower Subcommittee of the Senate Armed Services Committee in March 2018 on Navy and Marine Corps Aviation Programs, Vice Admiral Paul A. Grosklags, USN, stated, "The MH-53E will continue to perform its primary mission of airborne mine countermeasures as well as transport of cargo and personnel until it is replaced by the Littoral Combat Ship (LCS)."

With a reduction in the inventory objective for LCSs subsequent to the Navy's announcement of the Force Structure Assessment recommending a 355-ship Navy, the Committee is concerned about a capability gap for mine countermeasures missions. The Committee requests the Navy submit a report not later than 90 days following the date of enactment of this Act on the feasibility and impact of recapitalizing the MH-53E fleet with a derivative of CH-53K that would address its use in airborne mine countermeasures missions and additional missions of conducting vertical onboard delivery and transporting personnel and cargo. The Committee recognizes that the CH-53K helicopter currently being built for the Marine Corps would be a logical option that might replace the capability that would be lost with the retirement of the Navy's MH-53E fleet.

**Continued F-15 C/D fleet modernization**

The committee is aware that the U.S. Air Force is undertaking a review of its aircraft force mix and structure, including the appropriate balance between 4th and 5th generation aircraft in the Active-Duty and reserve force, and that the Air Force expects to complete that review in August 2018. Therefore, the committee requests a briefing on the results of this review no later than September 1, 2018.

The committee remains concerned that retiring entire fighter fleets, like the F-15C, without acquiring sufficient replacement aircraft, will drive the number of fighter aircraft below the levels required by the National Defense Strategy and below the floor established by Section 131 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91). Until the Air Force makes a final determination on the future of the F-15C/D fleet, the committee encourages the Air Force to continue investment in the modernization of the F-15 C/D, including the Active Electronically Scanned Array (AESA) radar, the Electronic Warning Warfare System (EWWS), and the Eagle Passive Active Warning and Survivability System (EPAWSS), which provides radar warning, geo-location, situational awareness, and self-protection solutions to detect and defeat surface and airborne threats in contested environments. The committee notes the Air Force has funded procurement of EPAWSS for its F-15E fleet and the necessary research and development to outfit the F-15C/D fleet.

**Explosive Ordnance Disposal technology development**

The committee notes that conventional Explosive Ordnance Disposal (EOD) units across the military services require upgraded equipment and technology enhancements, particularly for routine inspection and search activities. The committee believes that conventional Joint Service EOD units may benefit from rapid acquisition of EOD equipment, which have high-definition resolution and encrypted signals, among other upgraded capabilities. The committee understands that the Department of Defense canceled the Explosive Ordnance Disposal/Low Intensity Conflict program element which formerly developed and delivered Joint Service EOD advanced capabilities. The committee understands the Combating Terrorism Technical Support Office (CTTSO) will absorb this mission area within the Improvised Defeat Device and Explosive Countermeasures subgroup activity.

The committee encourages the Director of the CTTSO to appropriately prioritize funding toward delivering advanced capabilities for conventional Joint-Service EOD units.

**F-35 modifications to Block 4 configuration**

To date, the committee notes neither the Air Force, the Navy, nor the Marine Corps has made a decision on what portion of the current fleet of F-35 aircraft will be brought up to a Block 4 configuration.

Pursuant to section 224(b) of the National Defense Authorization Act for FY2017 (Public Law 114-328), the Secretary of Defense submitted a report to the congressional defense committees that contained the basic elements of an acquisition program baseline for

F-35 Follow-on Modernization (FOM) Block 4. Within the report, per aircraft cost estimates to retrofit Low Rate Initial Production (LRIP) Lots 2–8 aircraft to a Block 4 configuration are roughly \$16.0 million, and per aircraft cost estimates to retrofit LRIP 9–10 aircraft to Block 4 configuration are roughly \$13.0 million. With more than 350 F-35s already procured that could require modification to Block 4 and the substantial cost to modify each aircraft to the most advanced configuration to provide the best capability to the warfighter, considerable affordability issues face the Department.

Accordingly, the committee directs the Secretary of the Defense to submit a report not later than 180 days after the enactment of this Act, to identify which F-35 aircraft will be brought up to a Block 4 configuration and a timeline to complete modernization to Block 4.

#### **Ford-class sustainment and product support**

The committee notes that with the delivery of the USS *Gerald R. Ford* (CVN-78) in May 2017, sustainment and product support of this new class of aircraft carriers will be critical to mission effectiveness and operational availability. As the *Ford*-class program continues with testing and delivery of additional aircraft carriers, the committee believes life cycle sustainment planning must be properly funded to maintain hull, mechanical, electrical, and combat systems to the class' 50-year service life.

Accordingly, the committee is concerned that the budget request included no funding for maintaining Electromagnetic Aircraft Launch System software. The committee urges the Navy to plan for and appropriately fund sustainment and product support for *Ford*-class aircraft carriers, particularly systems critical to mission accomplishment.

#### **Guided missile frigate (FFG(X))**

The committee applauds the Navy's decision to procure a guided missile frigate (FFG(X)) with increased lethality, survivability, and endurance to meet the requirement for Small Surface Combatants within the most recent Navy Force Structure Assessment. While maintaining the Navy's "high/low" mix of ships, the FFG(X) program greatly expands upon the capabilities of the Littoral Combat Ship program, returning many of the multi-mission warfighting attributes of *Oliver Hazard Perry*-class frigates to the fleet and enabling operations in more contested environments.

As the Navy refines FFG(X) concept designs with industry through fiscal year 2019, the committee continues to support a full and open competition with a single source detail design and construction award in fiscal year 2020. The committee also supports the Navy's approach to commonality with existing Navy platforms, such as the Mark-41 Vertical Launch System and Enterprise Air Surveillance Radar, to reduce acquisition and sustainment costs. The committee encourages the Navy not to trade-off warfighting capability for other considerations.

**HH-60 Combat Rescue Helicopter program**

Air Force combat rescue forces and assets are among the most deployed in the Department of Defense, and the heroic efforts of Air Force combat rescue airmen and women have resulted in over 12,000 U.S. and allied lives saved, often under harrowing conditions. These demanding conditions have exacted a significant toll on this force, which has suffered significant combat losses of aircraft and personnel. The HH-60W Combat Rescue Helicopter (CRH) will replace the Air Force's rapidly aging HH-60G Pavehawk helicopters to continue to perform these critical combat search and rescue and personnel recovery operations. The current Air Force program of record is for a minimum of 112 HH-60W CRH aircraft. The committee notes that numerous force structure studies have documented the need for between 141 (USAF CSAR-X Analysis of Alternatives) and 171 (Joint Forces Command Joint CSAR Study) aircraft to meet the rescue requirement demands. Therefore, the committee supports 112 as the minimum number of HH-60W CRH aircraft to support the validated requirement.

**Immersive virtual shipboard environment training**

The committee understands that the Navy has used game-based learning concepts to develop immersive virtual shipboard environment (IVSE) training for select watchstations aboard Littoral Combat Ships (LCS) since 2013. The committee further understands that this IVSE training may have contributed to faster qualifications and certification timelines, higher degrees of proficiency, and increased knowledge retention. The committee believes that other programs may be able to benefit from IVSE training.

Accordingly, not later than November 1, 2018, the committee directs the Secretary of the Navy to provide to the congressional defense committees a report on IVSE training. This report shall include: (1) An assessment of IVSE training effectiveness compared to other training methods, including training benefits and lessons learned with IVSE training for LCS watchstations; (2) Future plans to incorporate game-based learning concepts and IVSE training to improve Navy and Marine Corps training for other naval platforms; (3) Other potential opportunities to incorporate game-based learning concepts and IVSE training to improve Navy and Marine Corps training for naval platforms; and (4) Any other related matters the Secretary deems appropriate.

**Intermediary Low-Cost Tactical Extended Range Missile**

The committee is concerned that the Army and Marine Corps have a capability gap in rocket and missile artillery, specifically an inability to engage targets at long ranges. The current inventory of mobile surface-to-surface missiles is not adequate to provide timely and accurate all-weather fire support in a Global Positioning System-denied environment to the joint force at ranges between 60 and 499 kilometers. The committee notes that current initial operational capability for the Long Range Precision Fires (LRPF) program is not until 2025. The committee encourages collaboration between the Army and Marine Corps in finding an intermediary solution, which could be procured and fielded rapidly to provide U.S.

ground forces with the capability to engage targets beyond 200 kilometers until LRPF is operational.

### **John Lewis-class fleet oiler multiyear procurement strategy**

The committee notes the fiscal year 2019 Navy shipbuilding plan includes seven *John Lewis*-class fleet oilers (T-AO) procured in fiscal years 2020 through 2024 at a cost of more than \$3.6 billion. The committee further notes that the first ship of this class, USS *John Lewis* (T-AO-205), was awarded in fiscal year 2016 and will be delivered to the Navy in November 2020.

The committee believes sufficient design maturity and cost-estimating precision have been achieved to merit consideration of a multiyear procurement contract for *John Lewis*-class fleet oilers in future budget requests.

The committee also notes recent shipbuilding multiyear procurement contract proposals projected savings in excess of 10 percent, as compared to annual procurement.

Therefore, the committee urges the Secretary of the Navy to consider a multiyear procurement strategy for *John Lewis*-class fleet oilers in future budget requests.

### **Light-weight polymer technologies for ammunition and small arms**

The committee continues to support the Department's efforts to decrease the weight of metal cartridge cases for ammunition in order to decrease the load burdens on the warfighter. Notable improvements include the potential for improved accuracy and consistency, increased individual mobility, decreased logistical resupply burdens, and reduced fuel consumption in operations.

The committee is supportive of recent efforts at the Naval Surface Warfare Center Crane Division to test and qualify 0.50 caliber ammunition with polymer cartridge cases, which resulted in greater accuracy and more consistent rates of fire.

Notably, the committee understands that efforts to lighten the weight of ammunition boxes with different materials can decrease weight by 33 percent, and when combined with the 25 to 35 percent weight reduction from polymer cartridge cases and other efforts, can reduce the weight of a 0.50 caliber ammunition box by roughly 75 percent.

Additionally, the committee is encouraged by efforts to replace the metal of linked ammunition with polymer links, which can reduce weight by nine pounds per ammunition box, or 1,000 pounds per pallet.

Accordingly, the committee encourages the Department to continue and expand its efforts to explore polymer and other material weight reductions to other types of ammunition that could further reduce burdens on the warfighter.

The committee continues to hold the view that any new ammunition must meet all specifications for pressure, velocity, and accuracy and must be a drop-in replacement in terms of training, weapon function, lethality, storage, and transportation.

### **Maneuver Short Range Air Defense to counter Unmanned Aircraft Systems**

The committee is aware of the threat that small, agile, and low altitude Unmanned Aircraft Systems (UAS) pose to military ground forces in the field. The committee understands that the Army is seeking a cross-domain, multi-dimensional solution that can address both the evolving UAS threat that is becoming more difficult to detect, identify, and defeat as well as the ability to provide short-range air defense against low flying UAS and cruise missiles for Army maneuver units.

Therefore, the committee directs the Army to provide a briefing not later than September 30, 2018, identifying what requirements are similar to both the maneuver short-range air defense (MSHORAD) mission areas and the Counter-Unmanned Aircraft System (C-UAS) mission. Furthermore, the Army should identify what capabilities have been deployed, or are in development, that could be considered for use with Army ground mobile platforms to simultaneously address the C-UAS and M-SHORAD mission areas.

### **Navy equipment for the Heavy Polar Icebreaker program**

The committee notes the Government Accountability Office (GAO) published a report on April 13, 2017, titled "Status of Coast Guard's Heavy Polar Icebreaker Acquisition" (GAO-18-385R), which noted added space, weight, and power reservations for Navy equipment, such as a multi-mode radar and minor caliber weapons, were incorporated in the Department of Homeland Security-approved Operational Requirements Document for the Heavy Polar Icebreaker (HPIB) in January 2018. The committee is interested in better understanding the plan for Navy equipment to be incorporated on HPIBs.

Accordingly, not later than December 1, 2018, the Secretary of the Navy, in consultation with the Under Secretary of Homeland Security for Management, shall submit to the Committees on Armed Services of the Senate and the House of Representatives an unclassified report, which may include a classified annex, containing the following: (1) A detailed description of Navy equipment planned to be included in HPIBs, including Navy-Type, Navy-Owned equipment; (2) The estimated space, weight, power, and cost for the equipment described in paragraph (1); (3) A description of Navy equipment under consideration to be included in HPIBs; (4) The estimated space, weight, power, and cost for the equipment described in paragraph (3); (5) An explanation of the capability of the equipment listed in paragraphs (1) and (3) to assist or augment the missions of the Combatant Commanders and the execution of the Department of Defense's 2016 Arctic Strategy; and (6) A description of how the equipment listed in paragraphs (1) and (3) will meet a modular open systems approach to allow for future mission expansion.

### **Navy small arms weapons training**

The committee understands that the Navy Expeditionary Combat Command (NECC) and the Navy Strategic Systems Program (SSP) have successfully demonstrated an innovative synthetic small arms

training approach. The committee further understands this approach provides realistic metrics-based skills for a variety of individual and crew-served training courses of instruction. The committee believes other Navy commands could benefit from similar innovative synthetic small arms training approaches. Therefore, the committee urges the Secretary of the Navy to consider expanding innovative synthetic small arms training approaches beyond the NECC and Navy SSP.

#### **Preservation of F-117 aircraft with certified combat sorties**

The committee is aware that there are currently no F-117A aircraft with certified combat sorties on permanent display at either the National Museum of the United States Air Force in Dayton, Ohio or the National Air and Space Museum of the Smithsonian Institution. Following its first flight in 1981, the F-117A ably served in combat during Operations Just Cause, Desert Storm, Allied Force, Enduring Freedom, and Iraqi Freedom before being retired from front line service in 2007. The committee recognizes the F-117A's unique importance in aviation history as the world's first operational stealth aircraft and believes the Air Force should take appropriate steps to ensure future generations have the opportunity to experience first-hand combat-proven F-117As.

Therefore, the committee strongly encourages the Secretary of the Air Force to make the first two retiring F-117A aircraft with documented combat sorties available to the National Museum of the United States Air Force and the National Air and Space Museum of the Smithsonian Institution. The committee also notes the current presence at the National Museum of the United States Air Force of the existing prototype F-117 and encourages the Secretary of the Air Force to consider its transfer to an accredited affiliate of the National Museum of the United States Air Force or the National Air and Space Museum of the Smithsonian Institution.

#### **Presidential protection**

The committee recognizes the vital importance of the presidential protection mission. The airborne component is critical to ensuring safe airspace around the President. However, the committee is concerned with the inefficient use of national assets, such as the F-22, to accomplish the presidential protection mission. The committee believes this mission could be ably accomplished by a number of assets, including those from the Navy and Marine Corps, thereby relieving the stress on our most capable assets so they can focus on training to rebuild readiness and deter peer competitors.

The committee understands that Air Combat Command is pursuing different options to provide better and more efficient presidential support. However, the committee believes that the Chairman of the Joint Chiefs of Staff should examine how to provide presidential support most efficiently, using all available Department of Defense assets.

Therefore, the committee directs the Chairman of the Joint Chiefs of Staff to reassess presidential support tasking and options for improving the efficiency of support with an emphasis on freeing the most capable aircraft assets to focus on training for the most

stressing operational requirements, in line with National Defense Strategy.

#### **Report on Air Force plan for fighter aircraft**

The committee understands that Air Combat Command is developing a Fighter Roadmap which will detail the Air Force's plans for the fighter aircraft fleet.

The Secretary of the Air Force shall provide a report to the Committees on Armed Services of the Senate and House of Representatives on the Air Combat Command Fighter Roadmap. The report shall describe the Air Force's plans for the fourth-generation fighter fleet and plans for converting fighter units to the F-35. To the extent feasible, the report should discuss the criteria to be used for future basing operations of F-35 aircraft.

#### **Report on Navy's current and future state of long range strike capability**

The Secretary of the Navy is directed to submit a report to the congressional defense committees not later than February 1st, 2019 that describes the current and future state of the Navy's long range strike strategy. This report should include a comprehensive description of the Navy's plan to use all the various Navy munitions programs to meet operational requirements for land and maritime strike. The report should include discussion of the Next Generation Long-Range Attack Weapon (NGLAW), the Tomahawk and follow-on upgrades like the Maritime Strike Tomahawk and the Joint Multi-Effects Warhead System (JMEWS), Conventional Prompt Strike, Over-the-Horizon missile, SM-6, the Long Range Anti-Ship Missile (LRASM), and any follow-on programs. The report should include how the Navy strategy will impact to the missile industrial base.

#### **Rifle Marksmanship Training**

The committee notes that the service branches utilize traditional M4/M16 marksman training practices in connection with both basic marksmanship instruction and in maintaining marksmanship proficiency of seasoned personnel. Current dry firing techniques, an essential rifle training element, require servicemembers to recharge their weapons after each trigger pull. The committee is aware that a new rifle dry fire device (RDFD) technology exists that simulates a live fire session. This technology has the ability to improve proper marksmanship fundamentals and weapon manipulation skills, which can lead to increased lethality and combat survival rates. During dry fire sessions RDFD replaces the lower receiver of the M4/M16, thereby allowing for simultaneous training with sights, lasers, lights, switches, and hand placement while diminishing the possibility of negligent discharge. Improved M4/M16 marksmanship proficiency may be increased through RDFD, which in turn could lead to reduced costs associated with ammunition (live and blank), range time, and other expense items. The committee directs the Secretary of Defense to provide a briefing to the congressional defense committees by December 31, 2018, regarding the feasibility of utilizing RDFD technology for use with the M4/M16 rifle and any next generation rifle platform.

### **San Antonio-class Flight II amphibious transport ship multiyear procurement strategy**

The committee notes the fiscal year 2019 Navy shipbuilding plan includes four *San Antonio*-class Flight II amphibious transport ships (LPD) procured in fiscal years 2020 through 2024 at a cost of approximately \$7.0 billion. The committee further notes the Navy has identified LPD-30, which was authorized and appropriated in fiscal year 2018, as the first Flight II LPD.

The committee believes sufficient design maturity and cost-estimating precision have been achieved to merit consideration of a multiyear procurement contract for *San Antonio*-class Flight II amphibious transport ships, which will be procured in fiscal years 2020 through 2024. The committee further believes the Navy should maintain a procurement rate of one Flight II LPD per year to meet Navy requirements faster, as well as increase industrial base efficiency and stability.

The committee also notes recent shipbuilding multiyear procurement contract proposals projected savings in excess of 10 percent, as compared to annual procurements.

Therefore, the committee urges the Secretary of the Navy to utilize a multiyear procurement strategy for *San Antonio*-class Flight II amphibious transport ships in the President's Budget request for fiscal year 2020.

### **Small Unit Support Vehicle report**

The committee notes that the Small Unit Support Vehicle (SUSV) is the only vehicle that units can use to operate in deep snow conditions. The SUSV was designed to be air-droppable and able to operate in almost any condition. From a fleet of nearly 600 vehicles, there are fewer than 100 working SUSVs left. The SUSV is no longer a program of record, and as a result many SUSVs in the fleet are being cannibalized to keep a small number of SUSVs running.

Recently, the U.S. Army identified requirements for a Joint All-Weather/All-Terrain Support Vehicle (JAASV). Furthermore, the House and Senate reports accompanying H.R. 2810 (H. Rpt. 115-200) and S. 1519 (S. Rpt. 115-125) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) required the Department of Defense to conduct a Business Case Analysis to develop or procure a replacement for the SUSV. This analysis concluded that the replacement for the SUSV "will compete for resourcing during POM 20-24, United States Army Training and Doctrine Command (TRADOC) will define the Total Army requirement for both the Active and Reserve components, and Headquarters, Department of the Army will consider pursuing a SUSV/JAASV using Rapid Acquisition Authorities to quickly procure a Commercial Off the Shelf (COTS), Non Developmental Item solution."

Therefore, the committee encourages the Department of Defense to conduct a Department-wide operational needs review for the JAASV and subsequently consider granting rapid acquisition authorities needed to begin quick procurement of a COTS solution to this capability shortfall.

**Stryker A1 Production**

The committee is concerned about the Army's funding strategy for Stryker A1 production. The Stryker A1 configuration includes the Double-V Hull (DVH) upgrade and Engineering Change Proposal 1 to provide enhanced mobility and power.

The fiscal year 2019 Army budget request included \$21.9 million for Stryker upgrades to convert three flat bottom vehicles into the Double V Hull (DVH) A1 configuration. However, the committee is concerned that this does not resource the Stryker program sufficiently given the National Defense Strategy and long-term plans for the Stryker vehicle fleet. Therefore, the committee included a \$149.0 million zero-sum movement of funds within the Stryker program, authorizing a total of \$171.0 million.

The committee understands that the Army made a decision at a Requirements Oversight Council meeting to upgrade the entire Stryker legacy fleet to the Stryker A1 configuration. This decision was made after the Army submitted the fiscal year 2019 budget request. The Army has a total of 9 Stryker Brigade Combat Teams, and over 2,700 Stryker vehicles do not have both the DVH and engineering upgrades. In addition, the Army intends to use the Stryker A1 chassis for the Maneuver Short Range Air Defense capability which will likely require additional Stryker vehicles.

Therefore, as the Army considers funding levels for future budget requests, the committee encourages the Army to provide the necessary resources to support the decision to modernize the Stryker fleet to the A1 configuration, which may include modernizing at least one half of a brigade per year. Finally, the committee urges the Army to evaluate the potential cost savings and schedule acceleration that could be achieved by a multi-year procurement strategy.

**Swarm attack defense of Navy ships**

The committee recognizes the growing threat of small boat swarm attacks, in which an enemy seeks to overwhelm a ship's layered defenses by attacking in large numbers from different directions. The committee is concerned that some Navy vessels may lack sufficient self-defense capability against such threats. For example, as noted in the fiscal year 2017 annual report by the Office of the Director, Operational Test & Evaluation, the Expeditionary Sea Base (T-ESB) "self-defense capability is limited to crew-served weapons only. The T-ESB was designed to operate in a non-hostile environment with low/negligible threats to the ship. However, mine countermeasure operations may require the ship to operate close to littoral threat areas. The lack of self-defense capability renders the ship dependent upon other naval combatants and joint forces for protection in the littoral operating environment."

In order to ensure ships are sufficiently protected against swarm raids and other small boat attacks, the committee urges the Secretary of the Navy to ensure adequate self-defense capability requirements are in place for the mission sets and scenarios such ships may be called upon to undertake.



## **TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION**

### **Subtitle A—Authorization of Appropriations**

#### **Authorization of appropriations (sec. 201)**

The committee recommends a provision that would authorize the appropriations for research, development, test, and evaluation activities at the levels identified in section 4201 of division D of this Act.

### **Subtitle B—Program Requirements, Restrictions, and Limitations**

#### **Codification and reauthorization of Defense Research and Development Rapid Innovation Program (sec. 211)**

The committee recommends a provision that would codify the Rapid Innovation Program and would clarify elements of the program, including funding levels and policy surrounding broad agency announcements.

The committee notes that the Rapid Innovation Program was established to help increase the number of non-traditional vendors in technology and research and to help those innovators bridge the gap between basic research and commercialization. The program has demonstrated benefits to meeting Department of Defense (DOD) needs and should become a permanent facet of the DOD's toolkit for helping to improve acquisition of technologies and support U.S. small business innovators.

#### **Procedures for rapid reaction to emerging technology (sec. 212)**

The committee recommends a provision that would direct the Secretary of Defense to prescribe a procedure for the designation and development of urgently needed emerging technology research.

The committee established the position of Under Secretary for Research and Engineering (USD (R&E)) within the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), with the intention that this role would drive rapid innovation across science and technology within the Department. However, the committee recognizes that streamlined processes may need to be established to ensure that the Department is able to keep pace with the current speed of technological change. Therefore, the committee directs the USD (R&E) to establish a streamlined process that would allow the Department to identify areas of rapid technological change and indicate the need for immediate investment. This process could be similar to the Joint Urgent Operational Need process, established based on a similar provision in section 806 of

the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107–314).

**Activities on identification and development of enhanced personal protective equipment against blast injury (sec. 213)**

The committee recommends a provision that would require joint activities to be conducted in fiscal years 2019 and 2020 by the Secretary of the Army and the Director, Operational Test and Evaluation, in collaboration with academia, to determine the most effective personal equipment to protect against injuries caused by blasts in training and combat with \$10.0 million authorized to be available to carry out joint activities.

The committee notes that the Director of the Department of Defense (DoD) Blast Injury Research Program Coordinating Office established pursuant to Section 256 of the National Defense Authorization Act for Fiscal Year 2006 (Public Law 109–163) has a mission to ensure that effective mechanisms exist for focusing and coordinating DoD blast injury research efforts and collaboration with research expertise outside DoD. The committee recommends that Secretary of the Army, in his role as Executive Agent for Medical Research for Prevention, Mitigation, and Treatment of Blast Injuries ensure that the Office coordinates in the execution of activities mandated and authorized by this section.

**Human factors modeling and simulation activities (sec. 214)**

The committee recommends a provision that would require the Army, through the Army Research Institute or the Army Futures Command as determined appropriate, to establish human factors modeling and simulation activities. The military departments within the Department of Defense (DOD) seek ways to provide warfighters and civilians with personalized assessment, education, and training tools; to identify and implement effective ways to interface and team warfighters and civilians with machines; to use intelligent, adaptive augmentation to enhance decision-making; and to develop techniques, technologies, and practices to mitigate critical stressors that impede warfighter and civilian protection, sustainment, and performance.

The committee is aware of the significant possibilities that human factors modeling and simulation (M&S) will provide to the DOD when coupled with applied research in human simulation informed by physics-based survivability analysis models. Benefits of this type of M&S include enhancing warfighter performance and protection as well as improving efficiency and effectiveness in the development and procurement of personal protective equipment and weapons while realizing significant cost savings. Human factors M&S can rapidly assess many variables to quickly provide insights to optimize and integrate warfighter-based systems, including predicting injury, mobility, and survivability. These vital analytics contribute to determining the likelihood of mission success, as well as ways to expand training capabilities. The integration of physics-based human simulation, artificial intelligence, and clinical knowledge into systems has the potential to rapidly transform mission readiness and success.

The committee directs the Secretary of the Army to establish activities related to human factors modeling and simulation to maximize the effectiveness of the warfighter in each service, in concert with the warfighter's respective equipment and weapons systems. Such activities would bring together academia, industry, DOD science and technology, and DOD Program Executive Offices to accelerate research and development that enhances capabilities for human performance, human-systems integration, and training for the warfighter.

**Expansion of mission areas supported by mechanisms for expedited access to technical talent and expertise at academic institutions (sec. 215)**

The committee recommends a provision that would expand the mission areas included in the authority granted in section 217 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) to space, infrastructure resilience, and photonics.

The statute that this provision would extend gave the Secretary of Defense the authority to establish one or more multi-institution task order contracts, consortia, cooperative agreements, or other arrangements with universities that do not have similar existing constructs to facilitate expedited access to university technical expertise in support of Department of Defense mission areas. The extension to new mission areas would allow for more connections between universities and the Department of Defense in priority technologies.

The committee originally authorized this effort because of its concern that the Department of Defense was not optimally positioned to capitalize on all cross-functional aspects of emerging technologies that serve multiple purposes. The committee continues to believe a more streamlined construct must be available for expedited access to combine technical expertise and research efforts, reduce costs, and eliminate duplication of effort.

The committee notes and supports the ongoing basic research activities that are funded by the Department of Defense at universities and government labs, which have led to the development of most of the operational capabilities used by the Nation's military today, ranging from stealth to precision munitions to battlefield medicine, aircraft sustainment, and the Internet. The committee intends the authority in the recommended provision to supplement those basic research funding authorities and activities, and it expects the Department to issue guidelines as appropriate that reflect a streamlined, efficient process for components to have increased access to the technical expertise resident in the Nation's universities to help address the technical, engineering, and management challenges facing the Department.

In using the mechanisms established in the recommended provision, the committee urges the Department to expand the number of individual institutions actively pursuing and demonstrating technical expertise in the disciplines that directly support the efforts of the Department of Defense.

**Advanced manufacturing activities (sec. 216)**

The committee recommends a provision that would direct the Under Secretary of Defense for Research and Engineering and the Under Secretary of Defense for Acquisition and Sustainment to jointly establish activities aimed at demonstrating advanced manufacturing techniques and capabilities in depot-level activities or military arsenal facilities. Broadly, the committee urges the Department to consider these activities as part of more holistic plans to benefit from advanced manufacturing within its own organizations and the commercial sector.

The committee recognizes the transformative potential of additive manufacturing, or 3-D printing, to the industrial supply chain and across disciplines. The ability to use new materials in new ways or to develop new manufacturing processes has the potential to transform how the Department does business and significantly increase system readiness. The establishment of new Defense Manufacturing Innovation Institutes, including one focused on additive manufacturing, as well as the growing prevalence of 3-D printers at tactical levels indicate that the Department sees that potential as well.

The committee recognizes the extensive and growing reach of additive manufacturing within the commercial and defense sectors. However, additive manufacturing could also greatly improve the defense industrial base's ability to respond to military readiness demands when original equipment manufacturers are unable to meet or to fabricate obsolete parts that are no longer manufactured. Substantial room remains across the force to add more capacity for this type of capability, both to repair out-of-date equipment and to speed repair in order to meet urgent operational requirements.

Therefore, this provision would require the establishment of not less than three activities to demonstrate these techniques and capabilities. These activities would include efforts to develop military and quality assurance standards as quickly as possible and leverage current manufacturing institutes to conduct research in the validation of quality standards for additive manufactured parts. To complete these activities, the Department may enter into cooperative agreements and partnerships, based on several specific characteristics. Ultimately, the committee urges the Department to further integrate advanced manufacturing capabilities and capacity.

**National security innovation activities (sec. 217)**

The committee recommends a provision that would require the Under Secretary of Defense for Research and Engineering to establish activities to develop interaction between the Department of Defense and the commercial technology industry and academia with the goal of encouraging private investment in specific hardware technologies of interest to future defense technology needs with unique national security applications with \$150.0 million authorized to be available to carry out such activities.

Under this provision, the Under Secretary of Defense for Research and Engineering may transfer such activities to a non-profit entity to carry out the program if the Under Secretary can establish that a non-profit entity with sufficient private sector investment and personnel with the sufficient technical and management

expertise can attract sufficient private sector investment, has personnel with sufficient technical and management expertise, and has identified relevant technologies and systems for potential investment in order to carry out the specific activities authorized.

**Partnership intermediaries for promotion of defense research and education (sec. 218)**

The committee recommends a provision that would authorize Science and Technology Reinvention Laboratories (STRL) to establish partnership intermediary agreements (PIA) with not-for-profit entities or state and local government organizations to enable research and technology development cooperation to promote innovation to support defense missions. A PIA is an agreement, contract, or memorandum of understanding, between the government and an intermediary organization, such as a State or local governmental agency or nonprofit entity. A Partnership Intermediary performs services for the government labs that increase the likelihood of success in the conduct of cooperative or joint activities with small business firms, institutions of higher education, and industry. The PIA facilitates a wide range of licensing and other technology transfer initiatives.

The committee notes that military capabilities are supported by universities and industry in the maturation of technologies and production of materiel solutions. Much of the innovation comes from partnership with small businesses and universities. The commercial market driving the development of technologies is very dynamic. Military capability solutions are unique and often do not have a regular commercial market audience. The STRLs carry out significant basic and developmental research, much of it in collaboration with academia and the private sector. The government-funded research efforts to address military threats are critical to reducing technology development risk, and, if successful, can attract the necessary private sector partners and support to lead to manufacturing and commercialization or production of defense systems. However, traditional federal parameters are not sufficiently agile and flexible to allow military laboratories to respond in a timely fashion to the market-driven needs of its private sector partners, thus discouraging the partnerships that can often accelerate efforts to meet these vital military needs.

The committee believes that working through and in collaboration with partnership intermediaries provides the flexible supporting mechanism to effectively and efficiently interact with industry and academic partners to support better sharing of intellectual property, technical expertise, and research and testing facilities between interested public and private sector partners.

**Limitation on use of funds for Surface Navy Laser Weapon System (sec. 219)**

The committee recommends a provision that would limit funds to exceed a procurement quantity of one Surface Navy Laser Weapon System (SNLWS), also known as the High Energy Laser and Integrated Optical-dazzler with Surveillance (HELIOS), per fiscal year, unless the Secretary of the Navy submits a report to the congressional defense committees.

The committee understands that Navy officials designated SNLWS/HELIOS as the first rapid prototyping, experimentation and demonstration (RPED) project. The committee further notes that, on January 26, 2018, the Navy awarded a \$150.0 million contract for SNLWS Increment 1, HELIOS systems. Under this contract, the contractor will develop, manufacture, and deliver two test units in fiscal year 2020. The committee further understands this contract includes options for up to 14 additional production units, which, if exercised, would bring the cumulative contract value to \$942.8 million.

If the cumulative contract value is reached, expenditures under this program may exceed the Acquisition Category (ACAT) I-thresholds for research, development, test, and evaluation (RDT&E), including significant production. However, the committee has not yet received sufficient information on the requirements, acquisition plan, test plan, funding profile, and cost estimate to enable appropriate oversight.

The committee supports accelerated acquisition approaches, such as RPED. However, accelerated approaches, especially those that may expend significant resources and enter into production, such as SNLWS/HELIOS, must adhere to sound acquisition principles. Accordingly, this provision would direct the Secretary of the Navy to certify how SNLWS is incorporating those principles prior to exceeding the procurement rate of one SNLWS/HELIOS per year, including: a requirements document, acquisition plan, test plan, funding profile, and cost estimate. The committee encourages the Navy to tailor the certification materials to the extent provided for by existing flexibilities in acquisition law or regulation.

**Expansion of coordination requirement for support for national security innovation and entrepreneurial education (sec. 220)**

The committee recommends a provision that would expand the list of entities with whom the Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering, may coordinate and partner in order to support national security innovation and entrepreneurial education.

**Limitation on funding for Amphibious Combat Vehicle 1.2 (sec. 221)**

The committee recommends a provision that would limit all of the funds authorized for the Amphibious Combat Vehicle 1.2 from being obligated or expended until the Secretary of Defense provides the required report identified in the section titled Report on the Highest-priority roles and missions of the Department of Defense and the Armed Forces.

**Defense quantum information science and technology research and development program (sec. 222)**

The committee recommends a provision that would authorize a defense quantum information science and technology research and development program aimed at ensuring that the U.S. military is able to most effectively leverage the technological capabilities enabled by quantum science and technology to meet future military

missions. The effort would be led by the Undersecretary for Defense for Research and Engineering. The committee notes that research and development activities in quantum science shows the promise of: (1) Producing computers that will exceed the capabilities of all known traditional computers; (2) Enabling communication systems that enhance cryptography and the speed of communications; and (3) Developing measurement devices and sensors with heretofore unachievable precision and sensitivity. All of these will have significant impacts in the commercial sector, as well as in military systems.

The committee notes that the Department of Defense (DOD) has been investing in research and development in quantum information science and technology for many years, and has recently begun to ramp up those investments. The committee has also increased funding for these efforts in this bill. Private industry has significantly increased their investments in quantum science, in an attempt to pursue commercial applications. The committee's provision is intended to provide a strategic framework for DOD activities in this area, to help ensure U.S. superiority in the field, especially with respect to national security missions and systems.

The provision calls for coordination of quantum science research activities within the Department as well as encouraging robust interagency collaboration. For example, the committee notes that both the Department of Energy national laboratories and the Department of Commerce's National Institute of Standards and Technology have significant capability in quantum science which can contribute to DOD research and development efforts. It further calls for developing procedures for the effective transition of quantum science-enabled capabilities into deployed systems, and to support efforts to establish robust industrial and technical capabilities in the government and private sector, including facilities an infrastructure needed to sustain quantum research.

To focus the research portfolio, the provision recommends the establishment of a set of technical challenges that are consistent with expert analysis of the state of quantum research and its ability to enable advanced military capabilities, such as in data analysis, cryptography, and sensing. Due to concerns with the diffusion of quantum science research knowledge and intellectual property to peer competitors, the provision directs the Undersecretary to develop classification guidance and data management strategies for the appropriate protection on information. The committee notes that the Undersecretary must strike an appropriate balance between protecting national security secrets, and ensuring that the government, industry, and academic community can engage in open research and innovation as is necessary to advance the field.

#### **Joint directed energy test activities (sec. 223)**

The committee recommends a provision that would direct the coordination and enhancement of directed energy test activities. The committee notes that next generation directed energy weapon systems are being developed by the Department of Defense (DOD) and industry but the Nation's infrastructure for testing those weapon systems is antiquated and in need of modernization.

The Department established the Nation's first High Energy Laser System Test Facility (HELSTF) in 1975, but the technology has seen significant advancements over the course of four decades. As directed energy weapon systems mature, the need to validate their performance becomes increasingly important. The workload and number of directed energy demonstrations and exercises have increased significantly since 1975 and the projected workload for fiscal years 2018–2022 for HELSTF is large and growing, and has expanded to include high-powered microwave testing. Given these trends, this provision would require the Under Secretary of Defense for Research and Engineering to focus on management and acceleration of directed energy testing activities. Elsewhere in this Act, the committee recommends additional funding to initiate the modernization of directed energy infrastructure and test activities.

The committee applauds the Air Force for proposing plans for joint testing activities, which could potentially focus government expertise and reduce duplication of effort across the DOD, thus supporting more rapid and cost effective testing and fielding of directed energy weapon systems. The committee believes that doing so could also allow for broad, standardized collection and evaluation of data to establish test references and support acquisition and policy decisions in a more reliable fashion.

**Requirement for establishment of arrangements for expedited access to technical talent and expertise at academic institutions to support Department of Defense missions (sec. 224)**

The committee recommends a provision that would require the establishment of arrangements for expedited access to talent and expertise at academic institutions to support Department of Defense missions.

**Authority for Joint Directed Energy Transition Office to conduct research relating to high powered microwave capabilities (sec. 225)**

The committee recommends a provision that would expand the purview of the Joint Directed Energy Transition Office to include research relating to high powered microwave capabilities.

**Joint artificial intelligence research, development, and transition activities (sec. 226)**

The committee recommends a provision that would require the Under Secretary of Defense for Research and Engineering (USD (R&E)) to focus and coordinate Department of Defense (DOD) efforts on artificial intelligence. Focus in these areas should encompass coordination among the Services and the development of a comprehensive strategy for the DOD.

**Subtitle C—Reports and Other Matters**

**Report on comparative capabilities of adversaries in key technology areas (sec. 231)**

The committee recommends a provision that would direct the Director of the Defense Intelligence Agency, in coordination with rel-

evant partners, to complete a report that directly compares United States capabilities in near-term emerging technology (e.g., hypersonic weapons, directed energy) and longer-term emerging technology (e.g., artificial intelligence, quantum information sciences) with that of U.S. adversaries. This report should include relative spending information, evaluations of quality and quantity of research, test infrastructure and workforce, evaluations of technical progress, timelines for operational deployment, and an assessment of adversary intent or willingness to use the specified technology.

**Report on active protection systems for armored combat and tactical vehicles (sec. 232)**

The committee recommends a provision that would require the Secretary of the Army to submit to the Committees on Armed Services of the Senate and House of Representatives a report on the technologies related to active protection systems for armored combat and tactical vehicles no later than 60 days after the enactment of this Act.

The committee notes that the Army has conducted detailed testing of three active protection systems on the M1A2 Abrams, M2A3 Bradley, and STRYKER. Accordingly, the committee directs the Secretary of the Army to report on the effectiveness of the systems tested, plans for future testing, proposals for future development, and a timeline for fielding. The Secretary should include plans for how the Army will incorporate active protection systems into new armored combat and tactical vehicle designs such as Mobile Protected Firepower (MPF), Armored Multi-Purpose Vehicle (AMPV), and Next Generation Combat Vehicle (NGCV).

**Next Generation Combat Vehicle (sec. 233)**

The committee recommends a provision that would require the Secretary of the Army to submit to the Committees on Armed Services of the Senate and House of Representatives a report on the development of the Next Generation Combat Vehicle (NGCV) no later than 60 days after the enactment of this bill into law.

The committee is concerned that there is insufficient analysis to support the requirements for the NGCV, including consideration of threats and terrain, and that the requirements may not be relevant to the National Defense Strategy (NDS). Furthermore, the committee views this combat vehicle as a replacement to the aging Bradley fighting vehicle and believes it should be optimized for close combat maneuver, agile exploitation and transport of mechanized infantry as part of an armored, combined arms team.

Therefore, the committee encourages the Secretary of the Army to use all available acquisition authorities, to the fullest extent possible, to build a ground combat vehicle prototype with the potential to be rapidly produced and fielded. The committee expects the Army to exploit modern component technologies that can dramatically change basic combat vehicle design to improve lethality, protection, mobility, range, and sustainment. Such technologies could include vehicle active protection systems, reactive armor, composite armor, thermal signature reduction, noise reduction, fuel cell propulsion, opposed-piston engines, advanced transmissions, suspen-

sion, power generation, voltage management, 3rd generation forward looking infrared sights, integrated hostile fire detection, manned-unmanned teaming, automatic loaders, extended range top attack munitions, and cannons. The committee also encourages the Secretary to pursue an open system architecture to allow for future development. Finally, this prototype should possess sufficient power, design and other capabilities to enable the manned vehicle to control unmanned vehicles, when applicable.

The committee directs the Secretary to fully enable the Army's Tank Automotive Research, Development and Engineering Center (TARDEC) to develop an NGCV prototype based on their work to date. To support this effort, the committee believes TARDEC should be granted needed funds and authorities to develop a separate prototyping effort. The committee would require the amounts authorized to be appropriated for fiscal year 2019 for the Department of Defense by section 201 and available for research, development, test, and evaluation, Army, PE 63645A, for NGCV, not more than 50 percent may be obligated or expended until the Secretary of the Army submits to congressional defense committees the report.

#### **Report on the future of the defense research and engineering enterprise (sec. 234)**

The committee recommends a provision that would direct the Under Secretary of Defense for Research and Engineering (USD (R&E)) to conduct a review of the defense research and engineering enterprise.

Section 901 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) established the position of USD (R&E) in order to serve as Chief Technology Officer for the Department of Defense and to oversee the research and engineering enterprise. The committee believes that this role should be charged with solving enterprise-wide challenges facing the Department of Defense and so tasks the position with recommending solutions for improving the enterprise's success in a changing environment.

The technological world has changed significantly over the past decades. Commercial investment in technology has increased exponentially, the U.S. government's challenges with recruiting and retaining a qualified technical workforce have grown, the diffusion of technology around the world has occurred rapidly, and the rate at which technology within the Department of Defense moves from discovery to deployment in operational systems has plunged. Given these changes, the committee believes that the Department would benefit from a strategic review of its research and engineering enterprise, including the military department science and technology organizations, the Department of Defense laboratories, the test ranges, the Defense Advanced Research Projects Agency, the Defense Innovation Unit Experimental, the Strategic Capabilities Office, and the Small Business Innovation Research program.

The Defense Science Board (DSB) concluded a thorough and insightful review of this enterprise in January 2017 and found that the labs continue to fulfill vital missions on behalf of the warfighter but that they must also adapt their mission to continue to serve and ready themselves for evolving needs. The report includes a

clear dictate that “OSD [the Office of the Secretary of Defense] must actively champion and support the labs and Congress must continue working with the Department to simplify the regulatory environment in which the labs operate.”

The committee sees this provision as formally endorsing the DSB’s recommendation for attention to the challenges facing the laboratories, but, given the expansive purview of the USD (R&E), recommends that the scope of this study widen. The committee urges the USD (R&E) to identify any current impediments to effectiveness and recommend, where necessary, legislative actions for fixes. The committee is eager to use this report to ensure the relevance of defense research and engineering in a changing world.

**Modification of reports on mechanisms to provide funds to defense laboratories for research and development of technologies for military missions (sec. 235)**

The committee recommends a provision that would amend the existing reporting requirement for funding provided to defense laboratories under existing authorities to a continuous requirement as opposed to an annual report. The committee remains committed to the use of these authorities but believes that the reporting will be more impactful if continuously collected and disseminated across a broader audience, including senior officials, academia, and industry.

**Report on Mobile Protected Firepower and Future Vertical Lift (sec. 236)**

The committee recommends a provision that would require the Secretary of the Army to submit to the Committees on Armed Services of the Senate and House of Representatives a report on the requirements for Mobile Protected Firepower (MPF) and Future Vertical Lift (FVL) no later than 60 days after the enactment of this Act.

In light of the National Defense Strategy (NDS), the committee is concerned the Army is making significant investments in advance weapons systems that may not be suitable for a high intensity, combined arms battlefield. Therefore, the committee would like to understand how MPF and FVL would improve offensive overmatch against a peer adversary and how these systems could survive the effects of anti-armor and anti-aircraft networks established within anti-access, area-denial defenses. In addition, if the purpose for MPF and FVL is to support light infantry brigades, the committee requests additional details of these requirements. Finally, the report would detail the total number of systems needed, how these systems will be logistically supported within light formations, and plans to integrate active protection systems into their designs.

**Improvement of the Air Force supply chain (sec. 237)**

The committee recommends a provision that would allow the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics to use nontraditional technologies, such as additive manufacturing, artificial intelligence, and other software-intensive capabilities, to increase the availability of aircraft and decrease back-

logs for the production of spare parts for such aircraft. This provision would also allow the Assistant Secretary to advance the qualification and integration of additive manufacturing into the Air Force supply chain, reduce supply chain risk, and define workforce development requirements and training for personnel who implement and support additive manufacturing for the Air Force. The committee notes that the provision would also authorize \$42.8 million as denoted in the funding tables accompanying this Act for such purposes.

**Review of guidance on blast exposure during training (sec. 238)**

The committee recommends a provision that would require the Secretary of Defense to review the firing limits of heavy weapons during training exercises and provide a report no later than 180 days after enactment of this Act reviewing the cognitive effects of said blast exposure.

**List of technologies and manufacturing capabilities critical to Armed Forces (sec. 239)**

The committee recognizes that maintaining technological superiority is critical to U.S. military and foreign policy strategy. Each year, the Department of Defense spends billions of dollars to develop and acquire advanced technologies in order to maintain U.S. superiority. While the sale or transfer of these technologies is permitted and facilitated to allies, partners, and other foreign parties in order to promote U.S. national security, foreign policy, and economic interests, these technologies can also be targets for theft, espionage, reverse engineering, or illegal export. In an increasingly globalized and competition-defined world, safeguarding critical technologies from malfeasance and use by our adversaries or competitors is of strategic significance to U.S. national security.

The committee is concerned that the Department has replaced the Militarily Critical Technologies Program with other processes to determine which technologies are critical and how they should be protected to ensure consistency with U.S. interests. The committee also believes that the outcomes from the current processes for determining critical technologies may be underutilized and may fail in their purpose of informing export decisions if not properly utilized or properly integrated with other stakeholder agencies.

Therefore, the committee directs the Secretary of Defense to develop a list of militarily critical technologies and manufacturing capabilities. The primary emphasis of this list should be given to: (1) Research, development, design, and manufacturing expertise; (2) Research, development, design, and manufacturing expertise equipment and unique facilities; and (3) Goods and services associated with or enabled by sophisticated research, development, operation, application, manufacturing, or maintenance expertise, which are not possessed by countries to which exports are controlled and which, if exported or otherwise transferred, would permit a significant advance in the military capabilities of any such country. Upon development no later than December 31, 2019, the committee directs the Secretary of Defense to use the list to guide Department

recommendations in any interagency determinations on exercising export licensing, technology transfer, or foreign investment.

**Report on requiring access to digital technical data in future acquisitions of combat, combat service, and combat support systems (sec. 240)**

The committee recommends a provision that would require the Secretary of Defense to prepare and submit a report regarding access to digital technical data, to include that which is necessary to support the production of three-dimensional printed parts.

**Competitive acquisition strategy for Bradley Fighting Vehicle transmission replacement (sec. 241)**

This provision requires the Secretary of the Army to submit to the congressional defense committees, not later than February 15, 2019, a strategy to competitively procure a new transmission for the Bradley Fighting Vehicle family of vehicles, to include the Armored Multipurpose Vehicle and the Paladin Integrated Management artillery system. Additionally, no funds may be appropriated for a Bradley Fighting Vehicle replacement transmission until 30 days after the Secretary of the Army submits its strategy to the congressional defense committees.

**Independent assessment of electronic warfare plans and programs (sec. 242)**

The committee recommends a provision that would require the Secretary of Defense to enter into an agreement with the scientific advisory group “JASON” to produce an independent assessment of: U.S. electronic warfare strategies, programs, order of battle, and doctrine and adversary strategies, programs, order of battle, doctrine, including recommendations for improvement. The committee recognizes that the United States has a significant comparative military disadvantage against our peer competitors in aspects of the electronic warfare mission and in the conduct of joint electromagnetic spectrum operations.

The provision would require an independent assessment of both U.S. and adversary electronic warfare plans and programs. This should include an assessment of the electronic warfare strategies, programs, resources and doctrine of the U.S. and its potential adversaries. For the U.S. it should also include an assessment of what capabilities non-Department of Defense entities, to include allies and partners, can provide. Finally the assessment should include recommendations for improvements.

The provision would require that the JASON scientific advisory group conduct the assessment but allows for the Secretary to enter into an agreement with an alternate assessment group. The assessment shall be completed with a report of findings and recommendations to the congressional defense committees by October 1, 2019.

## **Budget Items**

### **Army**

#### **Army defense research sciences**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$276.9 million was for PE 61102A Defense Research Sciences, Army for fundamental scientific knowledge related to long-term national security needs.

The committee notes that basic research activities focused on technical areas of interest to Department of Defense missions lay the foundation upon which other technology development and new defense systems are built. Basic research activities fund efforts at universities, small businesses, and government laboratories. These investments also serve to help train the next generation of scientists and engineers who may work on defense technology problems in government, industry, and academia.

The committee also notes that this particular program builds fundamental scientific knowledge contributing to the sustainment of U.S. Army scientific and technological superiority in land warfighting capability and to solving military problems related to long-term national security needs. It also investigates new concepts and technologies for the Army's future force and provides the means to exploit scientific breakthroughs and avoid technological surprises.

Accordingly, the committee recommends an increase of \$7.5 million, for a total of \$284.4 million, in RDT&E Army, PE 61102A, for basic research. The committee directs that these funds be awarded through well-established and competitive processes.

#### **Army quantum information sciences**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$276.9 million was for PE 61102A Defense Research Sciences, Army, for fundamental scientific knowledge related to long-term national security needs.

The committee notes the transformative potential of quantum information sciences, with potential impacts across disciplines as diverse as cryptography and sensing. In competition with near-peer adversaries, such cutting-edge technology will become increasingly critical.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$281.9 million, in RDT&E, Army, PE 61102A, for research on quantum information sciences.

#### **University and industry research centers**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$92.1 million was for PE 61104A University and Industry Research Centers, Army.

The committee notes that this basic research program fosters university and industry-based research to provide a scientific foundation for enabling technologies for future force capabilities. In par-

ticular, this program funds collaborative technology alliances, which leverage large investments by the commercial sector in basic research areas that are of great importance to the Army. The committee is specifically encouraged by the efforts associated with the Army Research Laboratory's Open Campus initiative.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$97.1 million, in RDT&E, Army, PE 61104A. The committee directs that these funds be awarded through well-established and competitive processes.

#### **Sensors and electronic survivability**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$32.3 million was for PE 62120A Defense Research Sciences, Army, for sensors and electronic survivability.

The committee notes that this program accelerates the Army's work to enhance industrial base capabilities for improving weapon system performance, speed, fuel efficiency, and force protection. Such innovations ultimately aim to reduce part assemblies, decrease lifecycle costs, and enable point-of need part production.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$37.3 million, in RDT&E, Army, PE 62120A, to support tool and material process development.

#### **Aviation technology**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$64.8 million was for PE 62211A aviation technology.

The committee notes that several of the programs contained within this program element, such as rotors and vehicle management technology, engine and drives technologies, and platform design and structures technologies, involve research activities that may overlap with aviation research being performed elsewhere in the Department of Defense. Given this potential for redundant work, the committee believes that the level of funds requested for this program element is not entirely justified.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$59.9 million, in RDT&E Army, PE 62211A, in mission systems and engine and drives coordination, and recommends that the Army look for opportunities to increase collaboration and coordination with other Services and research programs on aviation technology.

#### **Weapons and munitions technology**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$40.4 million was for PE 62624A weapons and munitions technology.

The Nation is being challenged to maintain dominance across all domains as our adversaries have continued to develop and advance their military capabilities that threaten the U.S. homeland. To address these priorities, the Army Armament Research, Development and Engineering Center continues to invest in additive manufacturing technology to rapidly design, prototype, and manufacture critical novel printed armaments components. By advancing print-

ed electronics, energetics, and power sources, size and weight of munition components can be reduced, freeing up valuable internal space for increased lethality payloads, support range, and precision guidance to maximize weapon systems' capabilities while reducing operations and cost. With collaborations across the Services, the long-term goal of this effort is to develop the ability to fully print munitions on a single production line in an ammunition plant, increasing the U.S. Armed Forces' readiness. This effort will also demonstrate the ability to print replacement parts, customizable grenades that will provide both fragmentation and blast, embedded electronics in clothing, and antennae on soldiers' helmets.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$42.9 million, in RDT&E Army, PE 62624A, for advanced warheads technology.

#### **Human factors engineering technology**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$24.1 million was for PE 62716A human factors engineering technology.

Human factors engineering technology seeks ways to provide warfighters with personalized assessment, education, and training tools; to identify and implement effective ways to interface and team warfighters with machines; to use intelligent, adaptive augmentation to enhance decision making; and to develop techniques, technologies, and practices to mitigate critical stressors that impede warfighter protection, sustainment, and performance. The committee is aware of the significant possibilities that human factors modeling and simulation will provide to the DOD when coupled with applied research in human simulation that utilizes physics-based survivability analysis models. These vital analytics contribute to determining the likelihood of mission success as well as ways to expand training capabilities. The integration of physics-based human simulation, artificial intelligence, and clinical knowledge into the Department's warfighter systems has the potential to rapidly transform mission readiness and success.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$26.6 million, in RDT&E, Army, PE 62716A, for human factors engineering.

#### **Command, Control, and Communications technology**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$55.0 million was for PE 62782A Command, Control, and Communications technology.

The committee encourages the Secretary of the Army to continue supporting the development and advancement of technologies that address: the increasing gaps in position, navigation, and timing architectural and technological development; Global Positioning System vulnerabilities; and adversary navigation warfare capabilities. However, the committee is concerned that the activities described within this program element are duplicative across the Services.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$50.0 million, in RDT&E, Army, PE 62782A command, control and communications technology.

**Aviation advanced technology**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$124.9 million was for PE 63003A aviation advanced technology.

The committee notes that, of this amount, the total requested for platform design and structures system represents a more than doubling of this project's budget from past fiscal years. While the committee supports the continued air vehicle demonstration of critical new technologies, the committee is concerned that the large increase in funds is not justified by the project plans.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$119.9 million, in RDT&E, Army, PE 63003A, for platform design and structures systems.

**Extended Range Cannon Artillery gun**

The budget request included \$10.2 billion for Research, Development, Test, and Evaluation (RDT&E), Army, of which \$102.7 million was for PE 63004A Weapons and Munitions Advanced Technology.

The committee recommends an increase of \$20.0 million, for a total of \$122.7 million, in RDT&E, Army, PE 63004A, for the acceleration of the development of the Extended Range Cannon Artillery gun.

**Combat vehicle and automotive advanced technology**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$119.7 million was for PE 63005A combat vehicle and automotive advanced technology.

The committee understands that Army Tank Automotive Research, Development, and Engineering Center (TARDEC) spends hundreds of millions of dollars annually on improving the performance of vehicles. Fuel reduction is a critical objective to reduce fuel consumption and reduce the requirements for large convoys to deliver fuel to deployed forces. The committee believes that TARDEC should fund an effort to demonstrate leap-ahead technology for fuel reduction.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$122.2 million, in RDT&E, Army, PE 63005A, for modular scalable powertrain.

**Army Next Generation Combat Vehicle Prototype**

The budget request included \$10.2 billion for Research, Development, Test, and Evaluation (RDT&E), Army, of which \$119.7 million was for PE 63005A Combat Vehicle and Automotive Advanced Technology.

The committee recognizes the importance of the Army's efforts to expedite critical capabilities through rapid prototyping to meet the needs of combatant commanders. The committee believes that the Army must rapidly develop a prototype next generation combat vehicle to replace the aging Bradley fighting vehicle. The committee notes that the Army's Tank Automotive Research Development and Engineering Center (TARDEC) has done significant market surveys of the world's best modern component technologies, fabricated

a prototype hull, and produced a virtual design concept. The committee believes that the TARDEC should be given all needed funding and authorities to continue this prototyping effort with technology developers, operational users, testers, and commercial sector partners.

The committee recommends an increase of \$70.0 million, for a total of \$189.7 million, in RDT&E, Army, PE 63005A, for the Combat Vehicle and Automotive Advanced Technology to prototype the next generation combat vehicle.

### **High performance computing modernization program**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$183.3 million was for PE 63461A high performance computing modernization program.

The committee notes that this program is a Department-wide asset used by all of the Services and combat support agencies. Additional funding for this program would increase the research and development budget toward the level of that appropriated in fiscal year 2018. The committee notes that research and development initiatives under this program support Defense supercomputing resource centers, the Defense Research and Engineering Network, and software applications. The U.S. government has spent over \$7.0 billion to develop and implement this unique, world-class national computing asset for the DOD. It delivers approximately 3.2 billion processor hours and over 3.5 quadrillion floating point operations per second, available and configured to support the Department's most challenging problems and analysis of massive and complex datasets.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$188.3 million, in RDT&E, Army, PE 63461A, for high performance computing.

### **Research, Development, Test, and Evaluation funds for minor Science and Technology military construction**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$25.8 million was for PE 63734A military engineering advanced technology.

In the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), the committee urged the Department of Defense to invest in its military construction accounts for science and technology facilities, as well as those used for test and evaluation. Unfortunately, these projects generally fall victim to low prioritization, despite their major value to the Department's mission.

Accordingly, the committee recommends an increase of \$8.0 million, for a total of \$33.8 million, in RDT&E, Army, PE 63734A, for minor military construction projects for science- and technology-related facilities. The committee adds these funds in order to fund the request for Target Assembly Facility (92422) and Climactic Chamber Building (92344), both minor military construction projects with science and technology uses. The committee strongly encourages the Army to ensure coordination regarding the appro-

priate planning and design occurs so that these projects are executable.

### **Military engineering advanced technology**

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$25.8 million was for PE 63734A military engineering advanced technology.

The committee notes that centrifuge-based research has allowed the U.S. Army Corps of Engineers to test small-scale physical models of bridges, piers, and other installations and resulted in engineering improvements to new facilities. Additional funding is justified to expand the existing centrifuge capacity, as this research accelerates engineering advances with more efficiency and at lower cost.

Further, the committee recognizes the transformative potential of additive manufacturing, or 3-D printing, to the industrial supply chain and across disciplines. The ability to use new materials in new ways or to develop new manufacturing processes has the potential to transform how the Department does business and significantly increase warfighter system readiness.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$30.8 million, in RDT&E, Army, PE 63734A, for centrifuge research and additive manufacturing.

### **Position, navigation and timing technology**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$34.9 million was for PE 63772A advanced tactical computer science and sensor technology.

Near-peer adversaries, such as the Russian Federation and People's Republic of China, have taken note of American dependence on Position, Navigation, and Timing (PNT) technology and have heavily invested in navigation warfare technologies that can congest, degrade, jam, spoof, and eliminate Global Positioning Systems (GPS). Advancing assured PNT technologies for operation in a GPS-denied or -degraded environment are essential to the warfighter's ability to maintain overmatch in a multi-domain battlefield. This program element addresses the critical technological gaps that U.S. and coalition operations face in hostile, GPS-denied environments and will mature PNT situational awareness analysis tools that deliver PNT integrity monitoring, dissemination of time-related data, as well as hardware and software solutions to augment PNT for mounted and dismounted platforms.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$37.4 million, in RDT&E, Army, PE 63772A, for PNT research and development.

### **Command, Control, and Communication advanced technology**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$52.4 million was for PE 63794A Command, Control, and Communication (C3) advanced technology.

The committee encourages the Secretary of the Army to continue supporting the development and advancement of technologies that address: the increasing gaps in position, navigation, and timing architectural and technological development; Global Positioning System vulnerabilities; and adversary navigation warfare capabilities. However, the committee is concerned that the activities described within this program element are duplicative across the Services.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$47.4 million, in RDT&E, Army, PE 63794A.

#### **Anti-Personnel Improved Conventional Munition**

The budget request included \$10.2 billion for Research, Development, Test, and Evaluation (RDT&E), Army, of which, \$42.0 million was for PE 63639A tank and medium caliber ammunition.

The committee recommends an increase of \$14.0 million, for a total of \$56.0 million, in RDT&E, Army, PE 63639A, for the test and evaluation of the M999 Anti-Personnel Improved Conventional Munition to verify its compliance with the Department's policy on cluster munition. This request was included on the Army's unfunded priorities list.

#### **Tactical Exploitation of National Capabilities Radio Frequency Exploitation–Electronic Intelligence**

The budget request included \$10.2 billion for Research, Development, Test, and Evaluation (RDT&E), Army, of which \$35.7 million was for PE 63766A Tactical Exploitation of National Capabilities Radio Frequency Exploitation (TRFE)–Electronic Intelligence (ELINT).

The committee directs the Secretary of the Army to develop and experiment with prototypes that can be developed into suitable, survivable, and effective intelligence systems for support of the Army Field Artillery. The committee is aware of the plan to modernize the Army Field Artillery. The committee acknowledges that the development and fielding of Long Range Precision Fires (LRPF) is the Army's first priority for modernization. The committee, however, is concerned that Army Intelligence is not actively developing a capability to provide effective, suitable, and survivable intelligence, surveillance, and reconnaissance (ISR) capabilities for the Field Artillery. This ISR must be able to detect, locate, classify, identify, and confirm long-range targets. This is particularly important for engagement by long-range cannon and rocket batteries for attacking enemy targets deep within enemy defensive sectors and support zones. In light of requirements as detailed in the National Defense Strategy, the Army must rapidly field effective, suitable, and survivable ISR capabilities to support the Army Field Artillery.

The committee encourages the Secretary to exploit existing hardware and specialized software to support experimentation and testing. The Secretary should seek to transition as rapidly as possible to a program of record for an accelerated production decision.

Accordingly, the committee recommends an increase of \$8.0 million, for a total of \$43.7 million, in RDT&E, Army, PE 63766A, for TRFE–ELINT.

### **Indirect Fire Protection Capability**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$51.0 million was for PE 64319A Indirect Fire Protection Capability Increment 2-Intercept (IFPC).

While the Army continues to deprioritize IFPC, critical capabilities, such as cruise missile defense of fixed stations, are nonexistent. In too many respects, the Army Missile Defense (AMD) forces fielded today fall considerably short of being an effective foundation for the kind of conflict envisioned by the National Defense Strategy, and, while air and missile threats have become more capable and complex, U.S. AMD capabilities have undergone only a modest modernization.

In order to accelerate and prioritize the IFPC program, the committee recommends an increase of \$30.0 million, for a total of \$81.0 million, in RDT&E, Army, PE 64319A.

### **Mobile Protected Firepower**

The budget request included \$10.2 billion for Research, Development, Test, and Evaluation (RDT&E), Army, of which \$393.6 million was for PE 64645A Mobile Protected Firepower (MPF).

The committee recognizes the importance of the Army's efforts to modernize and to be better prepared to execute the National Defense Strategy. The Army has made clear its modernization priorities in order to rapidly build capabilities needed for combined arms maneuver against a peer adversary. The committee is concerned that the MPF is not suited for a high-intensity battlefield.

The committee recommends a decrease of \$75.0 million, for a total of \$318.6 million, in RDT&E, Army, PE 64645A, for MPF.

### **Suite of Vehicle Protection Systems—EMD (Vehicle Protection Suite Project)**

The committee is concerned with the Army's repeated decision to ignore the articulated requirement for a vehicle laser warning system as part of the Abrams IB and the Bradley 2B ECP improvements. The laser warning system provides critical protection and enhances current operational capabilities utilized by forward deployed units. Any additional delay in fielding will only continue to undermine effectiveness and prolong an increased risk to the Army's ground combat vehicles. The Committee recommends that the Army realign its procurement plans and integrate the laser warning system onto the M1 Abrams Tank and any other forward deploying ground combat vehicles. The Committee encourages the Army to concentrate on survivability and incorporate a laser warning sensor suite system to adequately address the growing threat of anti-tank guided missiles and laser beam riding guidance systems. The Committee believes that by focusing on mature, field-tested protective technology, the active protection system (APS) will provide a balanced framework that both increases lethality and protection for the warfighter. As the Army transitions APS onto ground combat vehicles through the Vehicle Protection System, it will require the incorporation of a laser warning sensor suite onto the system.

Accordingly, the committee recommends an increase of \$9.0 million to Army Research, Development, Test & Evaluation, line 117 for Suite of Vehicle Protection Systems–EMD, and an additional decrease of \$9.0 million, for a total decrease of \$324.0 million, from Army Procurement of Weapons & Tracked Combat Vehicles, line number 6 for the Bradley Program MOD.

#### **Army contract writing system**

The budget request included \$10.2 billion in Research, Development, Test & Evaluation (RDT&E), Army, of which \$41.9 million was for PE 65047A Army Contract Writing System.

The committee is concerned about duplication among the Services in contract writing systems.

Accordingly, the committee recommends a decrease of \$41.9 million, for a total of \$0.0 million, in RDT&E, Army, PE 65047A.

#### **Major T&E investment**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$91.8 million was for PE 64759A major test and evaluation investment.

In the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), this committee urged the Department of Defense to invest in its military construction accounts for science and technology facilities, as well as those used for test and evaluation. Unfortunately, these projects generally fall victim to low prioritization, despite their major value to the Department’s mission.

Accordingly, the committee recommends an increase of \$25.0 million, for a total of \$116.8 million, in RDT&E, Army, PE 64759A, for minor military construction projects for science- and technology-related facilities. The committee adds these funds in order to fund the request for Armament Test Ops and Analysis Facility (58467), Guana Peak Site (63191), EMI RDT&E (87871), HPM Building 21245 (60556), Lift and Tiedown Test Facility Modernization (91080), Guided Missile Building (85286), and Braking and Maneuver Facility (60832), all minor military construction projects with science and technology uses.

The committee strongly encourages the Army to ensure that coordination regarding the appropriate planning and design occurs so that these projects are executable.

#### **High energy laser testing**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Army, of which \$306.0 million was for PE 65601A Army Test Ranges and Facilities.

The committee notes that next generation weapon systems are being developed by the Department of Defense and its defense industry partners but the Nation’s infrastructure for testing those weapon systems is antiquated and in need of modernization. As directed energy weapon systems mature, the need to validate their performance becomes increasingly important. The committee notes that the workload and number of directed energy demonstrations and exercises have increased significantly since 1975 and the projected workload for fiscal years 2018 through 2022 is significant.

Accordingly, the committee recommends an increase of \$15.0 million, for a total of \$321.0 million, in RDT&E, Army, PE 65601A, to accelerate the testing of those weapon systems.

## **Navy**

### **Navy basic research initiatives**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$119.4 million was for PE 61103N university research initiatives.

Basic research is critical to the development of next generation naval capabilities.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$124.4 million, in RDT&E, Navy, PE 61103N, for basic research. The committee directs that these funds be awarded through well-established and competitive processes.

### **Navy defense research sciences**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$458.7 million was for PE 61153N defense research sciences.

The committee notes that basic research activities serve to help train the next generation of scientists and engineers who may work on defense technology problems in government, industry, and academia.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$463.7 million, in RDT&E, Navy, PE 61153N, for basic research. The committee directs that these funds be awarded through well-established and competitive processes.

### **Navy quantum information sciences**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$458.7 million was for PE 61153N defense research sciences.

The committee notes the transformative potential of quantum information sciences, with potential impacts across disciplines as diverse as cryptography and sensing. In competition with near-peer adversaries, such cutting-edge technology will become increasingly critical.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$463.7 million, in RDT&E, Navy, PE 61153N, for quantum information sciences.

### **Directed energy applied research**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$14.6 million was for PE 62114N power projection applied research.

The committee notes that the National Defense Strategy specifically highlights the importance of directed energy and the potential that it holds for future operational capabilities.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$17.1 million, in RDT&E, Navy, PE 62114N, power projection applied research.

**Warfighter sustainment applied research**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$56.1 million was for PE 62236N warfighter sustainment applied research.

The request includes significant growth in Office of Naval Research Global (ONR Global). Though ONR Global's mission is undoubtedly important, the committee urges additional resourcing to go directly toward National Defense Strategy-aligned priorities as opposed to significantly growing this organization.

Accordingly, the committee recommends a decrease of \$7.5 million, for a total of \$48.6 million, in RDT&E, Navy, PE 62236N.

**Undersea warfare applied research**

The budget request included \$18.5 billion in Research, Development, Test and Evaluation (RDT&E), Navy, of which \$58.0 million was for PE 62747N undersea warfare applied research.

The committee continues to recognize the importance of building strong partnerships between Navy research labs, academia, and shipyards that build our nation's submarines. The committee encourages the Navy to closely coordinate this effort with its industrial base partners to ensure that funded research projects are relevant to specific engineering and manufacturing needs, as well as defined systems capabilities. Partnerships with academia should focus on well-defined submarine and autonomous undersea vehicle research, needs, accelerated technology transition projects, and workforce development to help ensure a sustainable industrial base. The committee encourages projects that aim to reduce manufacturing costs.

Accordingly, the committee recommends an increase of \$20.0 million, for a total of \$78.0 million, in RDT&E, Navy, PE 62747N, undersea warfare applied research.

**Innovative Naval prototypes—applied research**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$159.7 million was for PE 62792N applied research in Innovative Naval Prototypes.

The committee notes that this program element is tasked with developing leap ahead technologies in game-changing areas such as cyber, directed energy, electromagnetic warfare, and autonomous systems.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$164.7 million, in RDT&E, Navy, PE 62792N, for directed energy, electronic warfare, and unmanned and autonomous systems.

**USMC advanced technology demonstration**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$150.2 million was for PE 63640M United States Marine Corps Advanced Technology Demonstration.

The committee notes that, of this amount, a significant increase is requested for the futures directorate, an organization tasked with identifying future challenges and opportunities, developing

warfighting concepts, and comprehensively exploring options to inform the combat development process to meet the challenges of the future operating environment. The committee is concerned that such an increase is unjustified and cannot be absorbed through the work identified in the project description.

Accordingly, the committee recommends a decrease of \$10.0 million, for a total of \$140.2 million, in RDT&E, Navy, PE 63640M, for unjustified growth.

### **Innovative Naval prototypes—advanced technology development**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$161.8 million was for PE 63801N advanced technology development in Innovative Naval Prototypes.

The committee notes that this program element is tasked with developing leap ahead technologies in game-changing areas such as cyber, directed energy, electromagnetic warfare, and autonomous systems. The committee notes that undersea warfare capabilities are a key component of Navy modernization plans.

Accordingly, the committee recommends an increase of \$4.5 million, for a total of \$166.3 million, in RDT&E, Navy, PE 63801N, for directed energy, electronic warfare, and unmanned and autonomous systems.

### **Advanced combat systems technology**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$59.7 million was for PE 63382N advanced combat systems technology.

The committee is encouraged by the projects taken on within the advanced combat systems program element. The Low-Cost UAV Swarming Technology (LOCUST) program involves building a launcher that could send dozens of drones out of a tube in a swarm designed to “autonomously overwhelm an adversary.” The Heterogeneous Collaborative Unmanned Systems (HCUS) demonstration is part of the Effector Grid category for small autonomous systems. HCUS provides autonomous, tactical monitoring of an adversary’s port-sized littoral area for an extended period of time with capability to apply limited offensive effects on-demand. The committee urges the Navy to continue funding these projects and others in this program element.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$62.2 million, in RDT&E, Navy, PE 63382N, for LOCUST, HCUS, and Innovative Naval Prototype Transition.

### **Surface and shallow water mine countermeasures**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$62.7 million was for PE 63502N surface and shallow water mine countermeasures.

The committee notes that, on April 17, 2018, the Navy awarded an \$83.3 million contract for the design, test, and deployment of the Barracuda mine neutralization system. If all options are exercised, the committee understands that this contract includes op-

tions to design and deliver 750 Barracuda Engineering Development Models (EDMs) with a cumulative contract value of \$362.7 million.

The committee further notes that the Barracuda Preliminary Design Review and Critical Design Review (CDR) are scheduled for fiscal year 2020 and fiscal year 2021 respectively. The committee believes that the award of Barracuda EDMs should be delayed until an approved CDR drawing is achieved.

Accordingly, the committee recommends a decrease of \$26.0 million, for a total of \$36.7 million, in RDT&E, Navy, PE 63502N, for surface and shallow water mine countermeasures.

#### **Advanced submarine system development**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$109.0 million was for PE 63561N advanced submarine system development.

The committee understands advanced submarine propulsion development could be accelerated, if additional funds were available. The committee believes accelerating and expanding the use of composite materials, where appropriate, could enable significant warfighting and acquisition advantages in the construction of submarines.

Accordingly, the committee recommends an increase of \$3.5 million, for a total of \$112.6 million, in RDT&E, Navy, PE 63561N, for advanced submarine system development.

#### **Common Hull Auxiliary Multi-mission Platform acceleration**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$89.4 million was for PE 63563N ship concept advanced design.

The committee notes \$18.0 million of this request is in project 4037 for Common Hull Auxiliary Multi-mission Platform (CHAMP) industry studies, which will lead to a domestic common-hull design to replace aging mission-specific sealift and auxiliary designs. The committee understands that the CHAMP is a key element of sealift and auxiliary ship recapitalization. The committee further notes a March 2018 report to Congress stated, "CHAMP procurement could accelerate to as early as fiscal year 2023 with funding and congressional support." The committee further notes that the Navy has stated that \$18.0 million would be necessary to support such acceleration.

Accordingly, the committee recommends an increase of \$18.0 million, for a total of \$107.4 million, in RDT&E, Navy, PE 63563N, for ship concept advanced design.

#### **Littoral Combat Ship mission modules**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$103.6 million was for PE 63596N Littoral Combat Ship (LCS) mission modules.

The committee believes activities supporting the LCS mine countermeasures mission module should be consolidated in this program element or in a new LCS mine countermeasures mission module program element.

Therefore, the committee recommends the transfer of: \$7.6 million from PE 64127N (surface mine countermeasures), \$10.1 million from PE 64126N (littoral airborne mine countermeasures), and \$16.7 million from PE 64028N (small and medium unmanned undersea vehicles).

Additionally, the committee notes the USS *Jackson* (LCS-6) surface-to-surface missile module test has been deferred and recommends a decrease of \$5.0 million.

Accordingly, the committee recommends an increase of \$29.4 million, for a total of \$133.0 million, in RDT&E, Navy, PE 63596N, for LCS mission modules.

#### **Land attack technology**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$15.5 million was for PE 63795N land attack technology.

The committee notes a program delay and no future years funding for the Gun Launched Guided Projectile, despite plans to publish a Request for Proposals in fiscal year 2019 for Engineering, Manufacturing, and Development.

Accordingly, the committee recommends a decrease of \$15.5 million, for a total of \$0.0, in RDT&E, Navy, PE 63795N, for land attack technology.

#### **F/A-18 infrared search and track**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$108.7 million was for PE 64014N F/A-18 infrared search and track (IRST).

The committee understands that additional funding could reduce risk in operational testing of IRST Block II by restoring lab and flight tests that were deferred due to prior budget reductions.

Therefore, the committee recommends an increase of \$24.0 million, for a total of \$132.7 million, in RDT&E, Navy, PE 64014N, for F/A-18 IRST Block II testing.

#### **Small and medium unmanned undersea vehicles**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$16.7 million was for PE 64028N small and medium unmanned undersea vehicles.

The committee notes that this program element only includes activities related to the Knifefish unmanned underwater vehicle, which is part of the Littoral Combat Ship (LCS) mine countermeasures mission module. The committee believes activities related to LCS mine countermeasures mission modules should be consolidated in PE 63596N (LCS mission modules) or in a new LCS mine countermeasures mission module program element.

Accordingly, the committee recommends a decrease of \$16.7 million, for a total of \$0.0, in RDT&E, Navy, PE 64028N, for small and medium unmanned undersea vehicles and a transfer of the \$16.7 million decrease to RDT&E, Navy, PE 63596N.

### **Large unmanned undersea vehicles**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$92.6 million was for PE 64031N large unmanned underwater vehicles.

The committee understands that the \$21.2 million is early-to-need based on prior year congressional funding reductions.

Accordingly, the committee recommends a decrease of \$21.2 million, for a total of \$71.4 million, in RDT&E, Navy, PE 64031N, for large unmanned underwater vehicles.

### **Littoral airborne mine countermeasures**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$17.6 million was for PE 64126N littoral airborne mine countermeasures.

The committee notes this program element includes \$10.1 million in funds related to the Coastal Battlefield Reconnaissance and Analysis airborne mine countermeasures system, which is part of the Littoral Combat Ship (LCS) mine countermeasures mission module. The committee believes activities related to LCS mine countermeasures mission modules should be consolidated in PE 63596N (LCS mission modules) or in a new LCS mine countermeasures mission module program element.

Accordingly, the committee recommends a decrease of \$10.1 million, for a total of \$7.5 million, in RDT&E, Navy, PE 64126N, for littoral airborne mine countermeasures and a transfer of this \$10.1 million to RDT&E, Navy, PE 63596N.

### **Surface mine countermeasures**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$18.2 million was for PE 64127N surface mine countermeasures.

The committee notes that this program element includes \$7.6 million in funds related to the AN/AQS-20 sonar system, which is part of the Littoral Combat Ship (LCS) mine countermeasures mission module. The committee believes activities related to LCS mine countermeasures mission modules should be consolidated in PE 63596N (LCS mission modules) or in a new LCS mine countermeasures mission module program element.

Accordingly, the committee recommends a decrease of \$7.6 million, for a total of \$10.6 million, in RDT&E, Navy, PE 64127N, surface mine countermeasures and a transfer of the \$7.6 million decrease to RDT&E, Navy, PE 63596N.

### **AV-B Aircraft—Engineering Development**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$46.3 million was for PE 64214M AV-8B Aircraft—Engineering Development.

The committee notes that the Marine Corps plans to divest of the AV-8B by 2027 and replace it with the F-35B and that this transition is well underway. The committee also notes that, of the \$46.3 million requested in this budget line, \$13.9 million is for engine safety and reliability improvements and engineering change proposals. The remaining \$32.3 million requested is for weapons and avionics upgrades. The AV-8 platform was first fielded in the Ma-

rine Corps in the early 1970s, and the committee has concerns about continued investment in an aircraft that has limited utility against a peer adversary. Rather than continue to invest in a platform that, even in upgraded form, will not add meaningful capability to the joint force, the committee believes that these funds would be better used elsewhere to support modernization initiatives across the force.

Accordingly, the committee recommends a decrease of \$16.2 million, for a total of \$30.1 million, in RDT&E, Navy, PE 64214M, for AV-8B Aircraft—Engineering Development.

#### **Physiological episode safety improvements**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$21.0 million was for PE 64264N for Air Crew Systems Development.

The committee is concerned that U.S. military aircraft currently do not possess the ability to monitor the physiological status of aircrew and autonomously act to protect them in case of hypoxia or other physiological events. In response to physiological episodes in Navy aircraft, the National Aeronautics and Space Administration has recommended an advanced safety sensor that would monitor and record the composition of gases inhaled and exhaled by the pilot. These types of sensors have been developed by the Air Force Research Laboratory, and the committee believes that the Department of Defense should explore fielding them to all relevant Department aircraft. The committee believes that further integration of these breathing sensors into a fully autonomous life support system, which monitors the pilot's physiological state and automatically reacts to prevent mishaps, should be pursued.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$31.0 million, in RDT&E, Navy, PE 64264N, Air Crew Systems Development, for physiological episode safety improvements.

#### **EA-18G cognitive electronic warfare**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$147.4 million was for PE 64269N EA-18 Squadrons.

The committee recognizes the growing importance of electronic warfare and its critical role in any conflict with a peer or near-peer adversary. The committee believes that it is imperative that the United States maintains relevant and effective electronic warfare capabilities. Moving forward, the ability to sense and react to the electromagnetic spectrum will be key to success in any conflict with a peer competitor.

Therefore, the committee recommends an increase of \$95.3 million, for a total of \$242.7 million, in RDT&E, Navy, PE 64269N, for Reactive Electronic Attack Measures. This item was included on the Chief of Naval Operations' unfunded priorities list.

### **EA-18G offensive airborne electronic attack special mission pod**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$89.8 million was for PE 64270N Electronic Warfare Development.

The committee recognizes the growing importance of electronic warfare and its critical role in any conflict with a peer or near-peer adversary. The EA-18G special mission pod is intended to provide a special purpose mission pod to address emergent PACOM operational gaps. The committee believes that it is imperative that the United States maintains relevant and effective electronic warfare capabilities.

Therefore, the committee recommends an increase of \$31.6 million, for a total of \$121.4 million, in RDT&E, Navy, PE 64270N, for EA-18G offensive airborne electronic attack pod. This item was included on the Chief of Naval Operations' unfunded priorities list.

### **LPD-17 class systems integration**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$0.9 million was for PE 64311N LPD-17 class systems integration.

The committee understands that *San Antonio*-class (LPD-17) amphibious ships were designed to accommodate a 16-cell Mark-41 Vertical Launch System (VLS), which would increase lethality through employment of a variety of munitions, including Tomahawk, Enhanced Sea Sparrow, and Standard missiles.

The committee notes that the Secretary of the Navy and Commandant of the Marine Corps testified on April 19, 2018, before the Committee on Armed Services of the Senate, that they supported installation of VLS on Flight II LPD-17 class ships.

The committee further understands that approximately \$50.0 million would be required to complete the non-recurring engineering necessary to incorporate VLS on LPD-17 class ships.

Accordingly, the committee recommends an increase of \$50.0 million, for a total of \$50.9 million, in RDT&E, Navy, PE 64311N, for LPD-17 class systems integration.

### **SM-6 Block 1B 21 inch rocket motor**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$165.9 million was for PE 64366N Standard Missile improvements.

The committee recommends an increase of \$19.0 million, for a total of \$146.9 million, in RDT&E, Navy, PE 64366, for the 21 inch rocket motor. This is on the Chief of Naval Operations' unfunded priorities list.

### **Amphibious assault ship acceleration**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$60.1 million was for PE 64567N ship contract design and live fire test and evaluation.

The committee remains concerned with the Navy procurement profile for large deck amphibious assault ships, which includes a

span of 7 years until the next large deck amphibious assault ship (LHA-9) is procured in 2024.

The committee notes that efficiencies could be gained by reducing this span, which could enable a steadier workforce with an increased learning curve, material and equipment suppliers on more reliable and fixed delivery contracts, and a more effective continuous improvement schedule.

The committee urges the Secretary of the Navy to accelerate procurement of LHA-9 to not later than 2021 and understands that \$6.0 million is required for planning to support a fiscal year 2021 detailed design and construction award for LHA-9.

Accordingly, the committee recommends an increase of \$6.0 million, for a total of \$66.1 million, in RDT&E, Navy, PE 64567N, for ship contract design and live fire test and evaluation.

### **Electronic Procurement System**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$268.6 million was for PE 65013N Information Technology Development, including \$26.3 million for Electronic Procurement System.

The committee is concerned about duplication among the Services in contract writing systems.

Accordingly, the committee recommends a decrease of \$26.3 million, for a total of \$242.3 million, in RDT&E, Navy, PE 65013N.

### **Navy Information Technology Systems Development**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$268.6 million was for PE 65013N Information Technology Development, including \$63.8 million for Navy Personnel and Pay (NP2).

The committee is concerned about the lengthy timeline for delivery of capability to users. The committee encourages the Department of Defense to adopt modern software development practices that deliver capabilities to users in shorter increments and timelines. Best practices for incremental development call for delivering functional capabilities to the end-user at intervals of 6 months or less. The acquisition strategy includes a software development approach using a commercial off-the-shelf solution. However, NP2 does not plan to deliver any capability to users until fiscal year 2020 with the next increment of capability planned for 2 years later. The committee feels that the use of modern, commercial acquisition practices is especially important to support critical management and personnel and pay activities.

Accordingly, the committee recommends a decrease of \$63.8 million, for a total of \$204.8 million, in RDT&E, Navy, PE 65013N.

### **Management, technical, and international support**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$87.6 million was for PE 65853N management, technical, and international support.

The committee notes several projects contain insufficient budget justification and unjustified cost growth.

Accordingly, the committee recommends a decrease of \$9.0 million, for a total of \$78.6 million, in RDT&E, Navy, PE 65853N, for management, technical, and international support.

### **Maritime Strike Tomahawk**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$282.4 million was for PE 24229N for Tomahawk missiles and the Tomahawk Mission Planning Center.

The committee recommends an increase of \$8.7 million, for a total of \$291.1 million, in PE 24229N of RDT&E, Navy, to restore full funding and to maintain fiscal year 2021 initial operational capability.

### **Integrated surveillance system**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$37.0 million was for PE 24311N integrated surveillance system.

The committee notes that, since fiscal year 2015, the Navy has utilized Transformational Reliable Acoustic Path Systems (TRAPS) in anti-submarine warfare missions. The committee understands that these deployable systems have performed satisfactorily and comprise a critical element of the Navy's overall integrated undersea surveillance system. The committee is concerned capability or capacity gaps will be created if additional TRAPS units are not procured in fiscal year 2019.

Accordingly, the committee recommends an increase of \$35.0 million, for a total of \$72.0 million, in RDT&E, Navy, PE 24311N, for integrated surveillance system.

### **Advanced Anti-Radiation Guided Missile extended range**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$120.8 million was for PE 25601N for HARM Improvements, of which \$99.2 million is for development of the extended range (ER) version of the Advanced Anti-Radiation Guided Missile (AARGM).

The committee notes that the Navy plans to create an extended range version of the AARGM Block I, with no modification to the missile system except for the rocket motor. The AARGM Block I is currently in production. The committee also notes that the fiscal year 2017 annual report of the Director of Operational Test and Evaluation (DOT&E) recently stated that the AARGM Block I was "not adequate to support an evaluation of operational effectiveness or survivability." Furthermore, the report stated that the AARGM Block I "provides limited employment capability against advanced threat surface-to-air radar systems."

While longer range is an important factor when competing against near-peer adversaries, the committee believes that the Navy should not extend the range of the AARGM until the missile seeker is effective against "advanced threat surface-to-air radar systems." The committee supports the effort to design an anti-radiation missile that is relevant against a peer adversary. However, given DOT&E's findings on the suitability of AARGM Block I, the committee believes that simply extending the range will not be suf-

ficient and recommends that the Navy find a more comprehensive solution to this problem.

Therefore, the committee recommends a decrease of \$99.2 million, for a total of \$21.6 million, in RDT&E, Navy, PE 25601N, in order to pause development of the AARGM ER pending a Navy review of requirements.

### **Tactical Targeting Network Technology**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$104.7 million was for PE 25604N for Tactical Data Links.

The committee recognizes the increasing importance of data links to our warfighting concepts of operations and combat effectiveness. The Tactical Targeting Network Technology (TTNT) data link supports the Navy's Naval Integrated Fire Control—Counter Air and Offensive Anti-Surface Warfare. The committee believes that it is imperative that the Department accelerate the fielding of technologies, such as TTNT, that enhance our capabilities in any conflict with a peer or near-peer adversary.

Therefore, the committee recommends an increase of \$12.0 million, for a total of \$116.7 million, in RDT&E, Navy, PE 25604N, to accelerate the TTNT capability. This item was included on the Chief of Naval Operations' unfunded priorities list.

### **F/A-18 E/F engine enhancements**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$121.8 million was for PE 25633N for Aviation Improvements.

The committee recognizes that the F/A-18 E/F Super Hornet will remain a critical element of the carrier air wing for the foreseeable future. The committee supports the Navy's efforts to maintain the Super Hornet's relevance and effectiveness.

Therefore, the committee recommends an increase of \$15.0 million, for a total of \$136.8 million in RDT&E, Navy, PE 25633N, to accelerate the design and development of F/A-18 E/F Super Hornet engine enhancements to address range, speed, efficiency, and survivability improvements. This item was included on the Chief of Naval Operations' unfunded priorities list.

### **Amphibious Assault Vehicle**

The budget request included \$18.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$22.6 million was for PE 26629M Amphibious Assault Vehicles (AAV).

The committee understands that the Amphibious Assault Vehicle (AAV) Product Improvement Program (PIP)/Survivability Upgrade Program (SUP) will produce marginal improvements in the vehicle's overall survivability and that few of the proposed enhancements address threats the vehicle may face in conflict against a peer adversary. The AAV is a decades-old platform with legacy amphibious and combat capabilities that do not meet the needs of modern Marine amphibious forcible entry operations. Rather than continue to invest in a vehicle that, even in upgraded form, will not provide adequate maneuverability, survivability, or ship-to-shore performance, the committee believes these funds would be better

used elsewhere to support modernization initiatives across the force.

Accordingly, the committee recommends a decrease of \$22.6 million, for a total of \$0.0, in RDT&E, Navy, PE 26629M, for the Amphibious Assault Vehicle.

## **Air Force**

### **Air Force defense research sciences**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$384.3 million was for PE 61102F defense research sciences.

The committee notes that basic research investments serve to help train the next generation of scientists and engineers who may work on defense technology problems in government, industry, and academia.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$389.3 million, in RDT&E, Air Force, PE 61102F for basic research. The committee directs that these funds be awarded through well-established and competitive processes.

### **Air Force quantum information sciences**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$384.3 million was for PE 61102F defense research sciences.

The committee notes the transformative potential of quantum information sciences, with potential impacts across disciplines as diverse as cryptography and sensing. In the National Defense Strategy's environment of competition with near-peer adversaries, such cutting-edge technology will become increasingly critical. The committee urges the inclusion of research on the underlying mathematics of quantum enabled systems.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$389.3 million, in RDT&E, Air Force, PE 61102F, for quantum information sciences.

### **High energy laser research initiatives**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$14.5 million was for PE 61108F high energy laser research initiatives.

The committee notes that the National Defense Strategy specifically highlights the importance of directed energy and the potential that it holds for future operational capabilities.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$17.0 million, in RDT&E, Air Force, PE 61108F.

### **Materials**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$125.3 million was for PE 62102F materials.

The committee supports the Air Force's efforts to improve structural metallic materials used in high priority aerospace and defense missions. The use of high energy synchrotron x-rays is helping design engineers to better understand which materials are best

suiting for military performance requirements and to develop optimal and efficient manufacturing processes for these novel materials. It is critical that Air Force and other Department of Defense scientists engage in hands-on experiential learning to train more materials scientists and engineers in these capabilities, including the creation and implementation of high-fidelity simulations and advanced data-science methods to support development of next-generation weapons systems.

Accordingly, the committee recommends an increase of \$4.0 million, for a total of \$129.3 million, in RDT&E, Air Force, PE 62102F, in support of the Air Force's efforts to improve materials used in high priority aerospace and defense missions.

#### **Aerospace vehicle technologies**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$130.5 million was for PE 62201F aerospace vehicle technologies.

The committee notes that hypersonic technologies are a key component of the National Defense Strategy but is concerned that investment has been insufficient to support test infrastructure, advanced testing techniques, and the testing workforce. Without these investments, it is unlikely that hypersonic systems will achieve operational status.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$135.5 million, in RDT&E, Army, PE 62201F, for high-speed systems technology, including hypersonic vehicle structures.

#### **Affordable responsive modular rocket**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$190.9 million was for PE 62203F aerospace propulsion.

The committee notes the Air Force's participation in the initiative "Rocket Propulsion for the 21st Century" (RP-21), which serves as a focal point for the rocket propulsion development community. The committee applauds the interagency involvement in this effort. Within this effort, the exploration of next generation liquid rocket engine concepts focused on modularity are particularly valuable.

Accordingly, the committee recommends an increase of \$15.0 million, for a total of \$205.9 million, in RDT&E, Air Force, PE 62203F, for the affordable responsive modular rocket.

#### **Multi-mode propulsion applied research**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$190.9 million was for PE 62203F aerospace propulsion.

One of the efforts within "Rocket Propulsion for the 21st Century" (RP-21) is directed at developing technologies for high thrust chemical and electric thrusters to utilize a common propellant and tank. The committee urges the Air Force to accelerate these efforts for flight demonstration.

Accordingly, the committee recommends an increase of \$3.0 million, for a total of \$193.9 million, in RDT&E, Air Force, PE 62203F, for multi-mode propulsion.

#### **Solid Rocket Motor Produce On-Demand**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$190.9 million was for PE 62203F aerospace propulsion.

The committee notes the importance, within the Air Force's rocket propulsion efforts, of continuous flow processing technology in order to reduce the development time of a new motor. The committee believes that such efforts should be accelerated to the extent practicable.

Accordingly, the committee recommends an increase of \$2.0 million, for a total of \$192.9 million, in RDT&E, Air Force, PE 62203F, for the Solid Rocket Motor Produce On-Demand (SRM-POD) program.

#### **Aerospace propulsion**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$190.9 million was for PE 62203F aerospace propulsion.

The committee notes that the Air Force must continue development of critical next-generation engine programs that require both significant research and development funding and long-lead times for propulsion-system development. Advanced propulsion research is critical to meeting the requirements of advanced weapon systems concepts.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$193.4 million, in RDT&E, Air Force, PE 62203F, for turbine engine technology development.

#### **Aerospace sensors**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$166.5 million was for PE 62204F aerospace sensors.

The committee is concerned with the growth in this year's request for electronic component technology, electro-optical sensors and countermeasures technology and radio frequency sensors and countermeasures. Though the committee recognizes the importance of these technologies for warfare in contested environments, the committee urges the Air Force to take advantage of similar work occurring elsewhere in the Department of Defense.

Accordingly, the committee recommends a decrease of \$7.5 million, for a total of \$159.0 million, in RDT&E, Air Force, PE 62204F.

#### **Skywave Technologies Laboratory**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$141.9 million was for PE 62605F directed energy technology.

In the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), this committee urged the Department of Defense to invest in its military construction accounts for science and technology facilities, as well as those used for test and evaluation.

Unfortunately, these projects generally fall victim to low prioritization, despite their major value to the Department's mission.

Accordingly, the committee recommends an increase of \$4.0 million, for a total of \$145.9 million, in RDT&E, Air Force, PE 62605F, for minor military construction. The committee adds these funds in order to fund the request for the Skywave Technologies Laboratory. The committee strongly encourages the Air Force to ensure that coordination regarding the appropriate planning and design occurs so that these projects are executable.

#### **High energy laser research**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$43.4 million was for PE 62890F high energy laser research.

The committee notes that the National Defense Strategy specifically highlights the importance of directed energy and the potential that it holds for future operational capabilities.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$45.9 million, in RDT&E Air Force, PE 62890F.

#### **High powered microwave research**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$43.4 million was for PE 62890F high energy laser research.

The committee recognizes the importance of high powered microwave research as a component of directed energy technologies. Another provision in this Act specifically authorizes the Joint Directed Energy Transition Office to conduct this research along with its other duties.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$53.4 million, in RDT&E, Air Force, PE 62890F for high powered microwave research.

#### **Advanced materials for research**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$34.4 million was for PE 63112F advanced materials for weapons systems.

Though the committee recognizes the importance of materials development for critical systems, the committee believes that alternative approaches may be needed to ensure successful transition of these technologies into operational systems.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$29.4 million, in RDT&E, Air Force, PE 63112F, advanced materials for weapons systems.

#### **Materials affordability**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$34.4 million was for PE 63112F advanced materials for weapons systems.

The Metals Affordability Initiative (MAI) is a public-private partnership that has produced innovative metals technology for use in

a variety of Department of Defense systems over the past 19 years. The MAI has demonstrated significant improvements in the manufacture of specialty metals for aerospace applications for both the government and industry, and it provides the warfighter with metals of improved strength and durability, often at a reduced cost. This highly-successful initiative has resulted in over 100 current or planned insertions of new technology into systems Defense-wide with a tenfold return on total government investment (a total of \$2.4 billion).

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$36.9 million, in RDT&E, Air Force, PE 63112F, for materials affordability.

#### **Sustainment in science and technology**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$15.1 million was for PE 63199F sustainment in science and technology.

The committee notes that sustainment science and technology are directed at creating sustainable technologies, improving sustainment-related tools and processes, and developing technologies to fundamentally change sustainment missions. Given ongoing concerns about sustainment costs, the committee endorses this important mission and recommends that the Air Force continue to increase resourcing in this area.

Accordingly, the committee recommends an increase of \$1.0 million, for a total of \$16.1 million, in RDT&E, Air Force, PE 63199F, to develop sustainment technologies to improve component design, replacement, and concepts for performance improvement and reduced maintenance burden.

#### **Aerospace technology development and demonstration increase for operational energy capability improvements**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$121.0 million was for the PE 63211F Aerospace Technology Development/Demonstration.

The committee continues to recognize the urgent requirement to constantly innovate and improve combat capability and operational effectiveness for the warfighter, via targeted and competitive operational energy science and technology investments.

Accordingly, the committee recommends an increase of \$10.0 million in RDT&E, Air Force, for a total of \$131.0 million, in PE 63211F, for Aerospace Technology Development/Demonstration.

Specifically, the committee strongly encourages the Air Force to use the increase to fund design and manufacturing of aircraft finlets, micro-vanes, and high pressure compressor blade coatings that have demonstrated reduced drag, evinced fuel savings, and decreased maintenance requirements.

#### **Aerospace propulsion and power technology**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$115.4 million was for PE 63216F aerospace propulsion and power technology.

The Advanced Turbine Engine Gas Generator project develops and demonstrates core engine technologies for small turbines utilized in current and future aircraft, missile, and remotely piloted aircraft propulsion systems. The project develops and demonstrates technology to reduce cost of ownership by half while improving mission flexibility and fuel consumption to increase range. It will also pave the way for providing much-needed competition where there currently is none. The committee strongly encourages the commander of AFMC to fund technologies that lead to low-cost, high-performance turbofan engines of up to 1,200 pounds of thrust.

Accordingly, the committee recommends an increase of \$9.0 million, for a total of \$124.4 million, in RDT&E, Air Force, PE 63216F.

#### **Multi-mode propulsion advanced technology development**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$115.5 million was for PE 63216F aerospace technology development and demonstration.

One of the efforts within “Rocket Propulsion for the 21st Century” (RP-21) is directed at developing technologies for high thrust chemical and electric thrusters to utilize a common propellant and tank. The committee particularly notes the potential for this work to decrease servicing complexity for on-orbit refueling and to afford space operators maximum mission flexibility to respond to unplanned events.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$120.5 million, in RDT&E, Air Force, PE 63216F, for multi-mode propulsion.

#### **Technology for the sustainment of strategic systems**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$115.5 million was for PE 63216F aerospace technology development and demonstration.

The committee urges the Air Force to continue to perform altitude demonstrations at the Air Force Research Laboratory’s high altitude facility in order to develop integrated post-boost phase technologies. These systems can support strategic systems during storage, transportation, on alert, and during boost, and post-boost launch. Similar technologies are also being developed to reduce lifetime prediction uncertainty for individual rocket motors.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$125.5 million, in RDT&E, Air Force, PE 63216F, for technology for sustainment of strategic systems.

#### **Electronic combat technology**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$55.3 million was for PE 63270F electronic combat technology.

The committee supports the collaboration between the Defense Digital Service and the Air Force Research Laboratory to improve Air Force software engineering capabilities and to address high priority technical issues plaguing Air Force information technology acquisition programs and deployed systems.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$60.3 million, in RDT&E, Air Force, PE 63270F, for RF/EO/IR warning and countermeasures.

#### **Demonstrator Laser Weapons System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$43.4 million was for PE 63605F advanced weapons technology.

The committee is aware that collaboration between industry, the Defense Advanced Research Projects Agency, and the Air Force Research Laboratory has already produced the electric Laser Weapon System to detect, identify, and defeat unmanned aircraft system and cruise missile threats. The Demonstrator Laser Weapon System was designed to be the premier facility for evaluating the efficacy of lasers against a variety of live fire targets. The committee notes that the system can be upgraded to provide a more robust development testbed to prove out the tactics, techniques, and procedures for using a laser weapon for base defense. The testbed will also help the Air Force to refine procedures for defending against adversary unmanned aerial systems and cruise missiles.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$53.4 million, in RDT&E, Air Force, PE 63605F, for continued development of the demonstrator laser weapon system.

#### **Prototype Tanker**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$28.4 million was for PE 64776F Deployment and Distribution Enterprise R&D.

The committee is concerned about the growing threat to large high-value aircraft in contested environments. The KC-135 and hopefully the KC-46A in the near future provide greater operational availability and range for a broad swath of the joint force's aerial power projection and mobility portfolios. However, these assets are manned and increasingly difficult to protect. The committee believes, given the increasingly challenging operating environments our potential adversaries are presenting, it is prudent to explore options for optionally unmanned and more survivable tankers that could operate autonomously as part of a large, dispersed logistics fleet that could sustain attrition in conflict. Consequently, the committee directs the Secretary of the Air Force to prototype a contested environment tanker.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$38.4 million in RDT&E, Air Force, PE 64776F, for prototyping a contested environment tanker.

#### **Hypersonic Conventional Strike Weapon**

The budget request included \$40.2 billion in Research, Development, Test and Evaluation (RDT&E), Air Force, of which \$1.2 billion was for PE 64858F Tech Transition Program.

The committee, in consultation with the Air Force, believes this program can be accelerated.

Therefore, the committee recommends an increase of \$100.0 million, for a total of \$1.4 billion, in RDT&E, Air Force, PE 64858F, Tech Transition Program.

#### **Technology transition program**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$1.2 billion was for PE 64858F technology transition.

The committee supports the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics intent to accelerate the Air Force Research Laboratory's Low-Cost Attributable Aircraft Technology (using technology from the Strategic Capability Office's Avatar program) for collaborative pairing with manned platforms, potentially including the F-35. The committee views the combined application of commercial "smart" technology, autonomy, and artificial intelligence as imperative for solving current military challenges. Teams of low-cost collaborative systems provide new mechanisms to ensure survivability and mission success without leveraging exquisite technology and its associated high cost and long development timelines.

Accordingly, the committee recommends an increase of \$80.0 million, for a total of \$1.4 billion, in RDT&E, Air Force, PE 64858F, for low cost attributable aircraft prototype transition.

#### **Air Force supply chain innovation**

The budget request included \$40.2 billion in Research, Development, Test and Evaluation (RDT&E), Air Force, of which \$1.2 billion was for PE 64858F technology transition.

The committee is supportive of the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics' initiative to focus resources on increasing innovation within the Air Force's supply chain. Though constituting approximately 70% of the Air Force's budget, sustainment receives few resources for new technology development—predictive analytics, agile manufacturing, digital engineering, and artificial intelligence—to drive down costs. Given current aircraft availability shortfalls, the committee urges the Air Force to focus on the consolidation of technology development, applications to current availability challenges, and transitioning to the depots, all while developing and equipping the sustainment workforce.

Accordingly, the committee recommends an increase of \$42.8 million, for a total of \$1.4 billion, in RDT&E, Air Force, PE 64858F, for Air Force supply chain innovation.

#### **Contracting Information Technology System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$17.6 million was for PE 91410F Contracting Information Technology System.

The committee is concerned about duplication among the Services in contract writing systems.

Accordingly, the committee recommends a decrease of \$17.6 million, for a total of \$0.0 million, in RDT&E, Air Force, PE 91410F.

### **Advanced Battle Management System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$207.7 million was for PE 64281F Tactical Data Networks Enterprise.

As part of its movement towards an Advanced Battle Management System, the Air Force has indicated the need to increase the capability of its communications and data links. The committee strongly supports efforts to increase the capability of our information links. The committee also strongly supports efforts to accelerate capabilities that will make our forces more relevant and effective at deterring, and, if necessary, defeating a peer adversary.

Therefore, the committee recommends an increase of \$50.0 million, for a total of \$257.7 million, in RDT&E, Air Force, PE 64281F, for Agile Communications, High Capacity Backbone and Link 16 Enhancements in order to accelerate the Advanced Battle Management System.

### **JSTARS recap radar**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$0.0 was for PE 37581F for the JSTARS Recapitalization.

The committee is concerned that the Air Force's decision to cancel the JSTARS Recapitalization program leaves in limbo the continued development of the Recap radar, for which the Air Force has spent years and millions of dollars bringing to its current maturity. The committee supports the Air Force's move to an Advanced Battle Management System but is apprehensive about the Air Force's proposal to divest existing capability in the current JSTARS aircraft while its plan for future capability remains aspirational. The risk, if not likelihood, of a significant capability gap warrants mitigation.

As the Air Force evolves its view of what the Advanced Battle Management System entails and begins to bring capability online, the committee believes that it is prudent to continue development of the Recap radar to explore further potential uses and provide the Air Force with options.

Therefore, the committee recommends an increase of \$50.0 million, for a total of \$50.0 million, in RDT&E, Air Force, PE 37581F, for continued Ground Moving Target Indicator radar development.

### **Major Test and Evaluation Management**

The budget request included \$10.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$91.8 million was for PE 64759F, Major Test and Evaluation (T&E) Investment.

The committee notes the importance of test and evaluation infrastructure to bring mature capabilities to the warfighter.

Accordingly, the committee recommends an increase of \$15.0 million, for a total of \$106.8 million, in RDT&E, Air Force, PE 64759F, to fund improvements for Air Force test infrastructure.

### **Air Force Integrated Personnel and Pay System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$47.3

million was for PE 65018F Air Force Integrated Personnel and Pay System (AF-IPPS).

The committee is concerned about the lengthy timeline for delivery of capability to users. The committee encourages the Department of Defense to adopt modern software development practices that deliver capabilities to users in shorter increments and timelines. Best practices for incremental development call for delivering functional capabilities to the end-user at intervals of 6 months or less. However AF-IPPS does not plan to delivery any capability to users until fiscal year 2021. The committee feels that the use of modern, commercial acquisition practices is especially important to support critical management, personnel and pay activities.

Accordingly, the committee recommends a decrease of \$34.1 million, for a total of \$13.2 million, in RDT&E, Air Force, PE 65018F.

#### **B-52**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$280.4 million was for PE 11113F for B-52 system improvements.

The Air Force has requested a transfer of \$14.8 million from Aviation Procurement, Air Force (APAF) to this PE.

Therefore, the committee recommends an increase of \$14.8 million, for a total of \$295.2 million, in RDT&E, Air Force, PE 11113F, for B-52 system improvements.

#### **Airborne Early Warning and Control System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$120.7 million was for PE 27417F for the Airborne Warning and Control System (AWACS).

As part of its movement towards an Advanced Battle Management System, the Air Force has indicated the need to increase the capability of its AWACS aircraft through advanced communications, networking, and sensor capabilities. The committee believes these capabilities should be accelerated.

Therefore, the committee recommends an increase of \$10.0 million, for a total of \$130.7 million, in RDT&E, Air Force, PE 27417F for E-3 Advanced Battle Management and Surveillance Bridge Capabilities.

#### **Maintenance, Repair, and Overhaul System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$50.9 million was for PE 78055F Maintenance, Repair, and Overhaul System.

The committee is concerned about the lengthy delivery timeline for this program, going multiple years without delivering capability to the end-user. The committee notes that for many IT programs and activities the Department has been slow to adopt modern, commercial “agile” acquisition practices. In many programs the Department is still using dated and slower IT development and deployment practices—which usually end up being more costly and delivering out-of-date software products.

Accordingly, the committee recommends a decrease of \$35.1 million, for a total of \$15.8 million, in RDT&E, Air Force, PE 78055F.

#### **Defense Enterprise Accounting Management System Increment 2**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$99.7 million was for PE 91538F Financial Management Information Systems Development, including \$11.8 million for Defense Enterprise Accounting Management System Increment Two.

The committee is concerned about the lengthy delivery timeline for this program, going multiple years without delivering capability to the end-user. The committee notes that for many information technology (IT) programs and activities the Department has been slow to adopt modern, commercial “agile” acquisition practices. In many programs the Department is still using dated and slower IT development and deployment practices—which usually end up being more costly and delivering out-of-date software products.

Accordingly, the committee recommends a decrease of \$11.8 million, for a total of \$87.9 million, in RDT&E, Air Force, PE 91538F.

### **Defense Wide**

#### **Defense Advanced Research Projects Agency defense research sciences**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$422.1 million was for PE 61101E defense research sciences.

The committee recognizes that the Defense Advanced Research Projects Agency’s defense research sciences program element provides the technical foundation for long-term national security through the discovery of new phenomena and exploration for defense applications. The committee is especially encouraged by the materials sciences work in this activity.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$427.1 million, in RDT&E Defense-wide, PE 61101E.

#### **Critical materials**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$422.1 million was for PE 61101E defense research sciences.

The committee recognizes the work done by the Critical Materials Institute (CMI) to focus on technologies that make better use of rare earth materials and eliminate the need for rare earth materials that are subject to supply disruptions. Therefore, the committee urges the Defense Advanced Research Projects Agency to work closely with entities such as CMI to further its own research on critical materials related to Department of Defense needs.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$424.6 million, in RDT&E, Defense-wide, PE 61101E, for critical materials research.

### **Defense-wide quantum information sciences**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$42.7 million was for PE 61110D8Z basic research initiatives.

The committee notes the transformative potential of quantum information sciences, with potential impacts across disciplines as diverse as cryptography and sensing. In competition with near-peer adversaries, such cutting-edge technology will become increasingly critical.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$49.7 million, in RDT&E, Defense-wide, PE 61110D8Z, for quantum information sciences.

### **Basic research initiatives**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$42.7 million was for PE 61110D8Z basic research initiatives.

The committee notes that basic research activities focused in technical areas of interest to Department of Defense missions lay the foundation upon which other technology development and new defense systems are built. Basic research activities fund efforts at universities, small businesses, and government laboratories. These investments also serve to help train the next generation of scientists and engineers who may work on defense technology problems in government, industry, and academia.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$49.7 million, in RDT&E, Defense-wide, PE 61110D8Z.

### **Activities to determine more effective personal protective equipment against blast injury**

The budget request included \$708.1 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for Basic Research, of which \$47.8 million was for PE 61117E Basic Operational Medical Research Science.

The committee remains concerned about the prevalence of mild and severe Traumatic Brain Injury (TBI) among servicemembers. Servicemembers exposed to repetitive concussive events or severe TBI due to repeated blasts and blast injuries are at high risk for long-term negative consequences to brain health, including the development of chronic neuro-degenerative disease.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$57.8 million, in RDT&E, Defense-wide, for Basic Research, PE 61117E, for Basic Operational Medical Research Science to conduct activities to determine the most effective personal protective equipment against blast injury. The provision authorizing such activities is contained in this title.

### **Joint munitions program**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$19.1 million was for PE 62000D8Z joint munitions program.

The committee is encouraged by the program element's mission of developing joint enabling technologies that can be used by the

Program Executive Officers as they develop their specific weapon programs. As expressed in the National Defense Strategy, future conflicts will increasingly require a joint perspective in these types of technology areas.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$21.6 million, in RDT&E, Defense-wide, PE 62000D8Z, for insensitive munitions.

#### **Applied research for the advancement of science and technology priorities**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$60.6 million was for PE 62251D8Z applied research for the advancement of science and technology priorities.

Though the committee is supportive of prototyping and early launch of science and technology applied research projects to shape investments, the committee is concerned with the large growth for this program element, given that the request was \$11.0 million lower in the previous budget request.

Accordingly, the committee recommends a decrease of \$7.5 million, for a total of \$53.1 million, in RDT&E, Defense-wide, PE 62251D8Z.

#### **Tactical technology**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$335.4 million was for PE 62702E tactical technology.

In accordance with the National Defense Strategy, the committee is supportive of developing new concepts and technologies to enhance the next generation of tactical systems. The committee urges the Defense Advanced Research Projects Agency to continue efforts in Advanced Tactical Technology and Aeronautics Technology.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$337.9 million, in RDT&E, Defense-wide, PE 62702E.

#### **Multi-Azimuth Defense Fast Intercept Round Engagement System**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$335.4 million was for PE 62702E tactical technology.

The committee notes that a number of efforts in this program element are proposed for significant growth at a time when similar activities in the Services and the Strategic Capabilities Office are also growing. At the same time, the committee is concerned that the Defense Advanced Research Projects Agency appears to be undertaking some of these efforts without sufficient coordination with the defense research community.

The committee notes particularly that the Multi-Azimuth Defense Fast Intercept Round Engagement System (MAD-FIRES), while potentially capable, faces an uncertain transition future due to the complexity involved with installation deployment and practical limitations on its use. In addition, the committee notes that

the Navy has not yet signed on as a transition partner despite the potential application to naval warfare.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$330.4 million, in RDT&E, Defense-wide, PE 62702E, for MAD-FIRES.

### **Materials and biological technology**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$226.8 million was for PE 62715E materials and biological technology.

The committee is concerned with the lack of transition plans for some technologies in Functional Materials and Devices and by the significant growth within Accelerating Discovery and Innovation without a clear justification.

Accordingly, the committee recommends a decrease of \$15.0 million, for a total of \$211.8 million, in RDT&E, Defense-wide, PE 62715E.

### **Combating terrorism technology support**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$125.2 million was for PE 63122D8Z combating terrorism technology support.

Despite recognizing the immense contributions of this program element to technological advancements over the past decades, the committee recognizes that in order to embrace the strategic goals laid out by the National Defense Strategy, funding for science and technology should move toward potential applications to near-peer adversaries. Further, the committee is concerned with the large growth between the budget request for the previous year and this year's request.

Accordingly, the committee recommends a decrease of \$14.0 million, for a total of \$111.2 million, in RDT&E, Defense-wide, PE 63122D8Z.

### **Advanced aerospace systems**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$227.6 million was for PE 63286E advanced aerospace systems.

At his confirmation hearing, the recently confirmed Under Secretary of Defense for Research and Engineering emphasized the urgent need for American progress on hypersonic weapons. This program element includes the Hypersonic Air-breathing Weapon Concept as a joint Air Force and Defense Advanced Research Projects Agency (DARPA) effort, in addition to Tactical Boost Glide, another joint Air Force and DARPA effort. Both of these technologies represent promising progress, and the committee urges the DARPA to increase its focus on their development.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$232.6 million, in RDT&E, Defense-wide, PE 63286E.

### **Blackjack**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$15.0 million was for PE 63287E Blackjack program.

The committee notes that funding for a Blackjack on-orbit demonstration is the Air Force's highest unfunded priority. The committee believes that the successful demonstration of a proliferated constellation of satellites in Low Earth Orbit would have profound implications for the resiliency and survivability of critical space missions.

The committee recommends an increase of \$110.0 million, for a total of \$125.0 million, in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, PE 63287E, to accelerate a cooperative on-orbit demonstration of the co-orbiting military missile warning constellation embedded within the commercial LEO mega-constellation and space-cloud network infrastructure. The committee directs the Air Force and DARPA to work with the Missile Defense Agency (MDA) to assess the potential for meeting MDA's space-based requirements on such a constellation.

### **Defense Innovation Unit Experimental**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$29.3 million was for PE 63342D8W Defense Innovation Unit Experimental (DIUx).

In its short tenure, DIUx has filled a critical niche between emerging technology firms and the Department of Defense. Over the coming year, the committee urges DIUx to consider the metrics by which it measures its success and its role in the full research and engineering enterprise that the Department operates.

Accordingly, the committee recommends an increase of \$0.5 million, for a total of \$29.8 million, in RDT&E, Defense-wide, PE 63342D8W.

### **Networked communications capabilities**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$12.7 million was for PE 63662D8Z networked communications capabilities.

Despite the importance of this mission, the committee is concerned about potential duplication of this program element's activities with those of the Services and urges closer coordination with similar programs instead of more funding within this line.

Accordingly, the committee recommends a decrease of \$7.5 million, for a total of \$5.2 million, in RDT&E, Defense-wide, PE 63662D8Z.

### **Enhancing cybersecurity for small vendors**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$114.6 million was for PE 63680D8Z, the Defense-wide manufacturing science and technology program.

Cyber vulnerabilities faced by the defense industrial base are a threat to national security. If cybersecurity vulnerabilities remain

unaddressed, defense supply chains face a higher likelihood of harboring serious and exploitable vulnerabilities. Moreover, many small firms have a significant lack of awareness of the Department of Defense's (DOD) cybersecurity requirements, which all DOD suppliers must meet.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$119.6 million, in RDT&E, Defense-wide, PE 63680D8Z, for cybersecurity protection of small vendors.

#### **Defense-wide manufacturing science and technology program**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$114.6 million was for PE 63680D8Z Defense-wide manufacturing science and technology program.

The Advanced Electronics and Optics program is a series of efforts addressing advanced manufacturing technologies with a wide range of applications. Additional funds can support development of advanced thin-film filters for eyewear, providing laser protection and rapid adjustment to changing light, improving warfighter visibility and adaptability.

Accordingly, the committee recommends an increase of \$2.0 million, for a total of \$116.6 million, in RDT&E, Defense-wide, PE 63680D8Z, for eye protection systems.

#### **Defense Logistics Agency manufacturing technology program**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$49.7 million was for PE 63680S manufacturing technology.

The committee notes the critical importance of improving manufacturing capability through a product's life cycle and applauds this program for providing low-risk technology implementation for small businesses and defense unique suppliers. The program's focus on maintaining viable supply sources and improving manufacturing processes have resulted in particularly large savings for the Department of Defense.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$52.3 million, in RDT&E, Defense-wide, PE 63680S.

#### **Defense Logistics Agency generic logistics research and development technology demonstrations**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$11.8 million was for PE 63712S generic logistics research and development technology demonstrations.

The committee notes the critical importance of logistics, especially given the National Defense Strategy's assumption that future operating environments will be contested. The committee urges prototyping and demonstrations in order to quickly test capabilities that might hold promise for future operational concepts.

The committee notes that for many years the Department of Defense has been developing various innovative technologies such as

autonomous vehicles, unmanned aircraft systems, additive manufacturing, and robots to help support a wide variety of mission needs. Some of these technologies could significantly improve combat capability and help save and preserve the lives of warfighters by performing similar duties on the battlefield. Autonomous vehicles could be used to move convoys of vehicles carrying water, fuel, and other supplies through dangerous areas without putting warfighters directly at risk. The committee understands that the Services have been working on these and other technologies to also enhance the Department's global supply chain.

The committee encourages the Services to jointly develop and share new technology gains and breakthroughs so that all the Services can benefit from more technologically advanced supply chain capabilities. Additionally, while leveraging the latest technologies can help address global supply chain needs, the committee notes the importance of monitoring, regulating, and managing the potential risks from innovative technologies.

Accordingly, the committee recommends an increase of \$1.0 million, for a total of \$12.8 million, in RDT&E, Defense-wide, PE 63712S.

#### **Strategic Environmental Research and Development Program and Environmental Security Technology Certification Program increases**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$77.7 million was for the PE 63716D8Z Strategic Environmental Research and Development Program (SERDP) and \$58.6 million was for the PE 63851D8Z Environmental Security Technology Certification Program (ESTCP).

The committee notes that both SERDP and ESTCP demonstrate and validate the most promising innovative technologies that can meet the Department's most urgent requirements, provide a return on investment, and are executed through a free and open competition.

Accordingly, the committee recommends an increase of \$10.0 million in RDT&E, Defense-wide, PE 63716D8Z, for SERDP, and an increase of \$10.0 million in RDT&E, Defense-wide, PE 63851D8Z, for ESTCP for respective totals of \$87.7 million and \$68.6 million.

The committee strongly encourages the Department to use the increases in SERDP and ESTCP to address the following: (1) To help ensure the safety and welfare of the servicemembers and their dependents by eliminating or reducing the generation of pollution and use of hazardous materials and reducing the cost of remedial actions and compliance with environmental laws and regulations, specifically as it relates to per- and polyfluoroalkyl substances; (2) To develop, demonstrate, validate, and field fluorine-free fire-fighting foam; (3) To meet long-term environmental threats and sustain training and testing ranges; (4) To advance sustainable technologies and bio-based products that meet military requirements; and (5) To advance other technologies deemed appropriate.

**Microelectronics technology development and support**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$168.9 million was for PE 63720S manufacturing technology.

The committee notes that the Tunable Filter Program focuses on advancement of microelectronic tunable thin film filters to provide greater functionality for wireless communications systems at reduced cost, size, weight, and power demand. The budget request includes insufficient funds to continue this program, critical to development of next-generation communications systems.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$173.9 million, in RDT&E, Defense-wide, PE 63720S.

**Advanced electronics technologies**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$111.0 million was for PE 63739E advanced electronics technologies.

The committee understands the importance of microelectronics fabrication, and, in particular, the Beyond Scaling Advanced Technologies project, which focuses on large scale co-development with industry as well as the design and capture of advanced intellectual property (IP) architectures, IP sharing, and access to foundries. The committee urges coordination between this effort and similar ongoing complementary work in the Office of the Secretary of Defense.

Accordingly, the committee recommends an increase of \$7.5 million, for a total of \$118.5 million, in RDT&E, Defense-wide, PE 63739E, for Electronics Resurgence Initiative.

**Network-centric warfare technology**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$483.5 million was for PE 63766E network-centric warfare technology.

Though the committee appreciates the importance of network-centric warfare for the future battle environment, the committee is concerned about the potential for transition of some of the projects within this program element. The committee is specifically concerned with tactical exploitation of the acoustic channel.

Accordingly, the committee recommends a decrease of \$10.0 million, for a total of \$473.5 million, in RDT&E, Defense-wide, PE 63766E.

**Sensor technology**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$190.1 million was for PE 63767E sensor technology.

The committee recognizes the threat posed by multiple small unmanned aerial systems beyond the line-of-sight. Therefore, the committee is encouraged by the mission and progress of projects like Aerial Dragnet and encourages collaboration with similar efforts occurring elsewhere in the Department of Defense.

The committee recommends an increase of \$1.5 million, for a total of \$191.6 million, in RDT&E, Defense-wide, PE 63767E, for sensor technology.

#### **Quick reaction special projects**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$69.6 million was for PE 63826D8Z quick reaction special projects.

The committee is concerned about the duplication of activities within this program element elsewhere in the Department of Defense. The committee is particularly concerned about the ability of the Rapid Reaction Fund to achieve its stated mission.

Accordingly, the committee recommends a decrease of \$10.0 million, for a total of \$59.6 million, in RDT&E, Defense-wide, PE 63826D8Z.

#### **Test and evaluation science and technology related to hypersonics and directed energy**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$96.3 million was for PE 63941D8Z test and evaluation science and technology.

Given the importance of hypersonic weapons and directed energy to the execution of the National Defense Strategy, establishing high quality testing facilities for these systems should be a high priority for the Department of Defense. Too often, these supporting functions are forgotten and research suffers for lack of test facility capacity.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$106.3 million, in RDT&E, Defense-wide, PE 63941D8Z, for hypersonics and directed energy test.

#### **Test and evaluation science and technology workforce development**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$96.3 million was for PE 63941D8Z test and evaluation science and technology.

The committee recognizes the integral importance of test and evaluation to successful science and technology development. The committee urges the Department of Defense to prioritize supporting capabilities that will enable technological progress—namely, investment in the workforce qualified in these disciplines. Research across disciplines depends on the engagement of experienced and qualified personnel.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$101.3 million, in RDT&E, Defense-wide, PE 63941D8Z, for workforce development.

#### **Operational energy capability improvement**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$40.5 million was for the PE 64055D8Z Operational Energy Capability Improvement Fund (OECIF).

The committee continues to recognize the urgent requirement to constantly innovate and improve combat capability and operational effectiveness for the warfighter, via targeted and competitive operational energy science and technology investments.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$50.5 million, in RDT&E, PE 64055D8Z, for OECIF.

Specifically, the committee strongly encourages the Department to use the OECIF and increase in funding to address the following urgent concerns: deployable technologies that can harvest water from air, tactical microgrids, sustainable forward operating bases, alternative energy storage in contested environments, waste to energy technologies that are necessary given the continual challenge of open-air burn pits, joint infantry company prototypes, long-endurance unmanned aerial vehicles, and other technologies deemed appropriate.

#### **National Security Innovation Activities**

The budget request included \$3.7 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for advanced technology development.

The committee remains concerned about foreign investment in emerging hardware technologies with potential national security applications that are produced by United States companies.

Accordingly, the committee recommends an increase of \$150.0 million to Research, Development, Test, and Evaluation (RDT&E), Defense-wide, line number to be determined, to conduct activities to establish interactions between the Department of Defense and the commercial technology industry and academia with the goal of encouraging private investment in specific hardware technologies of interest to future defense technology needs with unique national security applications. The provision authorizing such national security innovation activities is contained in this Act.

#### **Corrosion control and prevention funding increase**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$3.8 million was for the PE 604016D8Z Department of Defense (DOD) Corrosion Program.

The committee continues to be concerned that the Department has consistently underfunded the DOD Corrosion Program since fiscal year 2011. The DOD estimates that the cost to prevent and mitigate corrosion of its assets, including military equipment, weapons, facilities, and other infrastructure, is approximately \$22.9 billion.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$8.8 million, in RDT&E, Defense-wide, PE 604016D8Z, for the DOD Corrosion Program.

#### **Trusted and assured microelectronics**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of \$233.1 million was for PE 64294D8Z trusted and assured microelectronics.

The committee remains concerned about manufacturing supply chain assurance against counterfeit parts and ensuring ready access to trusted microelectronics. The committee notes its desire for a long-term strategy for the development of trusted microelectronics that can withstand any future problems with an international supply chain.

Accordingly, the committee recommends an increase of \$5.5 million, for a total of \$238.1 million, in RDT&E, Defense-wide, PE 64294D8Z, for new trusted approach development.

#### **Defense Contract Management Agency information technology development**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$12.0 million was for PE 65013BL, Information Technology Development.

The committee is concerned about the lengthy delivery timeline for this program, going multiple years without delivering capability to the end-user. The committee notes that for many information technology (IT) programs and activities the Department has been slow to adopt modern, commercial “agile” acquisition practices. In many programs the Department is still using dated and slower IT development and deployment practices—which usually end up being more costly and delivering out-of-date software products.

Accordingly, the committee recommends a reduction of \$12.0 million, for a total of \$0.0 million, in RDT&E, Defense-wide, PE 65013BL.

#### **Deputy Chief Management Officer policy and integration**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$2.1 million was for PE 65075D8Z Deputy Chief Management Officer (DCMO) Policy and Integration.

The committee recognizes that the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) gave the Office of the Chief Management Officer significantly increased responsibilities for data management and integration across the Department of Defense. Based on this new mission, the committee encourages the Department to invest in improved data processing and analytics tools to fulfill its expanded responsibilities.

Accordingly, the committee recommends an increase of \$1.0 million, for a total of \$3.1 million, in RDT&E, Defense-wide, PE 65075D8Z, for data and advanced analytics.

#### **Defense-wide electronic procurement capabilities**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$6.4 million was for PE 65210D8Z for Defense-wide Electronic Procurement Capabilities.

The committee is concerned about duplication among the Services in contract-writing systems. The committee encourages the program to consolidate requirements for contract-writing systems across the department.

Accordingly, the committee recommends a decrease of \$6.4 million in RDT&E, Defense-wide, PE 65210D8Z, for a total of \$0.0 million.

#### **Trusted and assured microelectronics engineering and manufacturing development**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$56.2 million was for PE 65294D8Z trusted and assured microelectronics.

The committee remains concerned about manufacturing supply chain assurance against counterfeit parts and ensuring ready access to trusted microelectronics. The committee notes its desire for a long-term strategy for the development of trusted microelectronics that fulfill Department of Defense needs.

Accordingly, the committee recommends an increase of \$2.5 million, for a total of \$58.7 million, in RDT&E, Defense-wide, PE 65294D8Z.

#### **Hypersonic experimentation facilities**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$258.7 million was for PE 64940D8Z, Central Test and Evaluation Investment Development (CTEIP).

The committee is encouraged by the priority the Department of Defense has placed on hypersonic capability development. However, the committee remains concerned that the United States may face a shortfall in advanced hypersonic experimentation facilities. The committee recognizes the important role that wind tunnels play in research development, and believes that the Department should make investments in hypersonic test and experimentation facilities that leverage the capabilities of academic institutions, government laboratories, and Industry teams to perform the necessary applied research.

Accordingly, the committee recommends an increase of \$10.0 million, for a total of \$268.7 million, in RDT&E, Defense-wide, PE 64940D8Z, for hypersonic experimentation facilities.

#### **Joint mission environment test capability**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$84.2 million was for PE 65100D8Z joint mission environment test capability.

The committee shares the view, repeatedly cited across the Department of Defense, that the lack of cyber range capacity, connectivity, and adequate interoperability is negatively impacting the military's ability to train in seamless, operationally realistic cyberspace environments and poses one of the greatest cyber challenges to the joint force.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$89.2 million, in RDT&E, Defense-wide, PE 65100D8Z, for cyber range capacity and development. These funds will allow for the construction of additional cyber range capacity and connectivity and support the Department's cyber ranges by im-

proving their cyber range architectures, instrumentation, standards, and workforce.

#### **Technical studies, support and analysis**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$22.6 million was for PE 65104D8Z technical studies, support and analysis.

The committee urges the Department of Defense to make use of a broader set of analytic capabilities, including those at not-for-profit research organizations and think tanks, universities, and in-house laboratories to support these types of analyses.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$17.6 million, in RDT&E, Defense-wide, PE 65104D8Z.

#### **Developmental Test and Evaluation**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$20.2 million was for PE 65804D8Z, Developmental Test and Evaluation.

The committee notes that software is becoming an increasingly important part of weapons systems and requires matching test capabilities.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$25.2 million, in RDT&E, Defense-wide, PE 65804D8Z, to improve software testing capabilities.

#### **Policy research and development programs**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$6.3 million was for PE 35186D8Z policy research and development programs.

The committee urges closer coordination with similar efforts elsewhere in the Department of Defense and across the intelligence community. The committee is also concerned about the growth in this request over past years.

Accordingly, the committee recommends a decrease of \$3.0 million, for a total of \$3.3 million, in RDT&E, Defense-wide, PE 65186D8Z.

#### **Personnel security and continuous evaluation innovation**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$5.6 million was for PE 35327V insider threat.

The committee notes that the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) directed the Defense Security Service to undertake an additional mission of background investigations and personnel security for Department of Defense (DOD) personnel. Elsewhere in this Act, the committee directed the DOD to engage with cutting-edge technology entities in order to advance existing capabilities related to personnel security, and this funding is meant to complement that directive.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$10.6 million, in RDT&E, Defense-wide, PE

35327V, for personnel security and continuous evaluation innovation.

### **Director, Operational Test and Evaluation cyber projects**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, of which \$71.0 million was for PE 65814OTE, Operational Test Activities and Analyses.

The committee notes that cybersecurity is an increasingly important matter for programs. As technologies and systems become more complex, the Department must augment investments in test and evaluation technologies.

Accordingly, the committee recommends an increase of \$10.9 million, for a total of \$81.9 million, for PE 65814OTE, Operational Test Activities and Analyses.

### **Items of Special Interest**

#### **AC-130J High Energy Laser**

The committee recommends full authorization of the \$34.0 million requested in fiscal year 2019 for the U.S. Special Operations Command (USSOCOM) AC-130J High Energy Laser (HEL) program intended to deliver a 60 kilowatt laser for operational assessment during fiscal year 2022. However, the committee is concerned that the future year's defense program for fiscal years 2020 through 2022 does not project sufficient funds for the completion of this effort and an additional \$62.0 million will be required to integrate, test, and assess the laser weapons system in the coming years.

As noted in testimony before the committee, the advanced state of the HEL technology may permit an expedited schedule of integration, testing, and operational assessment of this weapon system. The committee believes that the Department should make the investment necessary to field this potentially transformative capability as soon as possible.

For fiscal year 2018, the committee notes that the Air Force and the Rapid Reaction Technology Office has committed to providing a total of \$29.0 million to complement the \$15.6 million allocated by USSOCOM for the AC-130J HEL effort. The committee strongly supports continued joint funding of this program given the significant potential application of HEL capabilities beyond special operations missions and the need to ensure integration with other HEL-related efforts across the Department.

Therefore, the committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, to submit a plan for fully funding the AC-130J HEL program in fiscal years 2020 to 2022 with the Department's budget request for fiscal year 2020.

#### **Acoustic Threat Detection**

The committee supports ongoing efforts by the Army to develop and operationally test acoustic threat detection technologies and is supportive of the continued deployment of these systems in Afghan-

istan and other locations to aid of combat operations. However, the committee is concerned about increased threats from unmanned aerial systems to forward operating bases. The committee encourages the Army to develop and operationally test sensor systems that can accurately detect and geo-locate both ground and air threats.

Therefore, not later than 60 days after the enactment of this Act, the committee directs the Secretary of the Army to provide to the congressional defense committees a briefing on existing threat detection technologies and capabilities, results of exercises and deployed operational testing, technologies available to detect both ground and air threats using a single integrated system, and the ability to accelerate the development and fielding of this technology to a program of record.

#### **Active Protection System for Abrams, Bradley, Stryker**

The committee notes that the Army's M1 Abrams Tank will be upgraded with the Trophy Active Protection System (APS), which has already been used in battle to protect the Israel Defense Forces Merkava tanks.

The National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) provided \$138.7 million in funding for one brigade in Europe and another \$171.0 million in an unfunded requirement for more APSs that could be used for Trophy for the Korean theater. The budget request included \$617.5 million that would support funding the procurement of 282 APSs and countermeasures for the Abrams tanks.

The Committee strongly supports the President's Budget Request for APS for Abrams, Bradley, and Stryker.

#### **Additive manufacturing within the military departments**

The committee remains strongly supportive of the Department of Defense's efforts to leverage additive manufacturing (AM) processes and applications in order to improve the Department's capabilities and materiel readiness. The committee strongly encourages the Department to pursue AM in order to augment the current supply chain, achieve shorter lead times compared to traditional manufacturing methods, negate the impact of obsolete or out-of-production sources of supply, and reduce costs and weight at the point of need.

The committee recognizes that the requirement to certify and qualify AM parts and components remains a fundamental challenge to broader and more rapid use of AM capabilities across the military departments. The committee is encouraged by the formation of the Joint AM Steering Group and Joint AM Working Group and encourages them to work with the Services to identify AM best practices. The committee also encourages the Services to continue advancing the qualification, certification, and integration of AM parts into the supply chain. The committee believes that the Services should continue to develop requirements and training necessary at the levels of warfighter, artisan, and acquisition officer. The Department must also ensure that any technical data and intellectual property related to AM parts are appropriately protected.

**Advanced countermeasure dispenser system for 4th generation/legacy aircraft**

The committee is aware that potential adversaries are making significant improvements in their ability to detect, target, and engage U.S. tactical aircraft across the infrared (IR) and radio frequency (RF) spectrum. Fourth-generation, “legacy aircraft”, are particularly vulnerable and, as they will form a significant portion of our tactical aircraft inventory for decades to come, their survivability will be increasingly challenged.

Legacy aircraft must include the ability to counter these emerging threats through readily-available and quickly-integrated means, including advance IR/RF expendable countermeasures and more capable dispensing systems.

Therefore, the committee strongly supports investment to sustain the survivability of our 4th generation tactical aircraft, including advanced countermeasures and their associated dispensing systems.

**Advanced hull technology**

The committee understands that the Navy may be making greater use of small planing boats to counter asymmetrical threats. The committee has supported the Navy’s investment in sophisticated computer hydrodynamic modeling and simulation tools for design, testing, and analysis of high-performance and high-efficiency hull forms.

The committee encourages the Navy to increase its investment in an advanced hull form development and prototype demonstration initiative and at sea testing to accelerate the development and transition of advanced hull designs, particularly hull forms that reduce injury to small craft operators and warfighters.

**Advanced low-weight body armor report**

The committee is aware that next generation body armor technology, including ultra-high molecular weight polyethylene, may provide maximum protection against a wide range of ballistics threats in a lighter, more flexible application that enhances comfort, mobility, and safety. Furthermore, high performance lightweight body armor technology could successfully protect warfighters, and with a range of modern lightweight, low-profile material grades, next generation body armor may offer a practical solution for all soldiers. The Under Secretary of Defense for Research and Engineering, in conjunction with the service secretaries, is directed to submit a report to the congressional defense committees not later than 90 days after the enactment of this Act. The report should describe the Department’s efforts to make available ultra-high molecular weight polyethylene and other next generation body armor technologies, including for vests, helmets and inserts. The report should also review technologies across the Services and highlight those that provide exceptional protective performance without compromising comfort, agility, or function.

**Aerospace sensors**

U.S. Air Force (USAF) and U.S. Navy front-line fighter aircraft are equipped with the Active Electronically Scanned Array (AESA)

radar with all services actively pursuing back fit of AESA radars on legacy aircraft. The USAF has identified threats from adversaries operating at frequencies where AESA's capabilities can be further improved and the USAF has tasked the Air Force Research Lab to lead the development of technologies that address these capability gaps. The Air Force's objective is to develop hardware that can be used across the services to address spectrum threats not only to AESA radars but threats to weapons, missile seekers, and other airborne platforms. The committee believes that dedicated resources to this program will result in newer, more capable arrays which will provide significant performance advantages, with wider frequency coverage. The committee encourages the Air Force to continue these efforts and provide resources as needed to develop newer, more capable arrays which will provide significant performance advantages.

#### **Airless Tire Technology Demonstration**

Special operations and other forces are heavily deployed across the world and will continue to be, in increasingly asymmetrical and unconventional warfare environments. The committee supports technology that will dramatically improve the mobility and safety of military personnel operating in hazardous environments, like non-pneumatic or airless tire technology. Airless tires can be superior to conventional tires in specific locations because they remain consistent in different atmospheric pressures and austere environments, are low maintenance, and require no additional inflation gauges or tools, saving weight and space for other essential equipment. The committee notes that an airless tire technology prototype has been developed and patented commercially and could be deployed in the next 18–24 months.

#### **Army Assured Mobility in Northern Regions**

Given the National Defense Strategy's emphasis on great power competition, the Committee is interested in the Army's plans for ensuring the mobility of Army ground vehicles in northern terrain environments to include the Arctic region and similar cold weather terrain. The Committee encourages the Secretary of the Army to ensure that ground vehicles are adequately prepared by conducting a series of experiments, if necessary, in these harsh northern environments, to include snow, ice, and muskeg. Such experiences could demonstrate science and technology capabilities to support future acquisition. Furthermore, the Secretary may develop a test plan to assess the current vehicle fleet and, if required, develop potential vehicle upgrades to support maneuver in northern regions that incorporate new hardware and software technologies.

#### **Combat Vehicle Light Weight Development Program**

The committee understands that legacy ground combat vehicles are struggling to meet performance requirements, especially survivability, due to the increasing threat and resulting armor applique weight increases. Developing lightweight combat vehicles is critical to warfighter effectiveness, fuel management, and mobility.

Therefore, the committee encourages the Department of Defense to accelerate research, development, and partnership activities in-

volving industry, government laboratories, and academia to accelerate development of lightweight materials and manufacturing methods for next generation ground combat vehicles.

The focus of the program should be on new, stronger, and lighter materials, multi-material manufacturing processes, innovative lightweight design methods, and technology transfer to develop a robust industrial base.

### **Comptroller General review of Department of Defense industry Independent Research and Development funding**

The committee directs the Comptroller General of the United States to undertake a review of the Department of Defense's (DOD) industry Independent Research and Development (IR&D) funding.

For nearly 80 years, the Department of Defense (DOD) has relied on industry IR&D as a key source of innovation to help maintain U.S. superiority on the battlefield. IR&D is initiated and conducted by defense contractors without direct DOD funding. Rather, IR&D costs are allowable as indirect expenses on contracts to the extent that they are allocable, fair, and reasonable.

To qualify as IR&D, the work must fall within the four following areas: (1) Basic research; (2) Applied research; (3) Development; and (4) Systems and other concept formulation studies. Further, the work must not be sponsored by a grant, required in the performance of a contract, or include technical effort expended in developing and preparing technical data specifically to support a submitted bid or proposal. The Defense Federal Acquisition Regulation (FAR) outlines additional IR&D requirements. Importantly, DOD's IR&D program offers participating industry firms the independence to decide which technologies to pursue, as long as these efforts are of potential interest to the DOD, as required by the Defense FAR Supplement. In recent years, however, the DOD and industry have cited communication gaps as having undermined their ability to validate that this linkage exists. Specifically, industry participants have lacked consistent visibility on DOD's investment priorities, and the DOD has lacked insight into industry IR&D projects.

The DOD has taken some steps to address the aforementioned gaps, including the creation of a Defense Innovation Marketplace website to facilitate IR&D communication. Nonetheless, the committee remains concerned that these actions may not provide sufficient guidance to maximize the impact of industry's IR&D investments for the DOD. The committee notes that the 2018 National Defense Strategy also highlights the need for additional changes to industry culture and investment sources in order to maintain DOD's technological advantage. Accordingly, the committee directs the Comptroller General of the United States to review DOD's IR&D efforts. This review should address: (1) DOD's policies and processes for managing IR&D, including how it structures contracts with industry partners to facilitate IR&D; (2) The levels and types of investment the DOD and industry have made in IR&D; (3) The benefits and incentives that IR&D offers to its industry participants; and (4) The innovation outcomes that the DOD and industry have obtained through IR&D. The review should also recommend improvements to DOD's IR&D efforts, as appropriate.

**Defense Advanced Research Projects Agency Gremlins Air-Recoverable Unmanned Aerial Vehicle System**

The committee is aware of the Defense Advanced Research Projects Agency (DARPA) led “Gremlins” research project focused on technologies enabling aircraft to launch volleys of affordable and reusable unmanned air systems (OAS), while reliably recovering them in mid-air. The committee is familiar with the persistent anti-access area denial (A2/AD) threat and believes that the project may develop a strategic tool in countering such tactics. The committee remains encouraged by the ongoing research and progress of the project, noting the award of a Phase 3 contract to support a feasibility demonstration in fiscal year 2019.

The committee encourages the Air Force to review and evaluate the Gremlins Program as the demonstrated capabilities mature, and develop a coordinated strategy with DARPA for potential transition of systems or technologies into Air Force programs. Considering the importance of overcoming A2/AD tactics by our adversaries, the committee expects the Air Force to keep the congressional defense committees updated on the Department’s plans for potential transition of this critical technology into a formal acquisition effort.

**Department of Defense Laboratory talent management and succession planning**

The committee shares concerns raised by the Defense Science Board that the Department of Defense laboratories should invest in succession planning, in order to ensure quality high-level staff. This concern is especially acute given the near-constant need to adapt to emerging technology. Laboratory directors should conduct a strategic planning process to ensure that high level personnel are serving in appropriate positions and that an adequate succession plan exists.

**Diamond transistor technology for power conversion in combat infrastructure**

The committee recognizes the Army’s ongoing need to reduce the size and weight and increase the power and efficiency of electrical power conversion and distribution systems used in combat and field deployable operations. The committee understands that diamond semiconductors offer the potential to potentially reduce the size and weight of these systems, provide significant gains in power and efficiency, and increase system survivability through enhanced electromagnetic pulse protection. The committee is encouraged by the interest shown by the U.S. Army Engineer Research and Development Center Combat Engineering Research Laboratory in investigating new techniques to build on previous efforts to produce diamond transistors, in trying to mature the technology to support potential device and product development, and believes more research effort in this field is warranted.

**Fielding of radiation detection devices**

The committee is encouraged by the Army’s efforts to field additional modern radiation detection devices, specifically AN/PDR-75A Radiac Sets (Personal Dosimeters), in order to reduce the current

readiness gap within the Active Army force structure. Although nearly fifty percent of Active Army forces do not yet have this relatively inexpensive, yet critical item of equipment, funding provided in fiscal year 2018 will allow the Army to reduce that shortfall significantly. The committee is further encouraged by the Army's efforts in fiscal year 2019 to develop and field the next-generation Joint Personal Dosimeter-Individual (JPDI). An individual dosimeter that includes immediate visual alert, measurement of radiation dose, and inclusion of a comprehensive, legal record and definitive proof of radiation exposure over a soldier's entire career is highly beneficial.

The committee encourages the Army to conduct a rigorous, fair, and open competition for this new system to ensure the very best dosimeter is developed and selected for deployment to soldiers worldwide in order to increase unit and individual survivability.

### **Hyper Velocity Projectile**

The committee is aware that the Strategic Capabilities Office (SCO) is testing a Hyper Velocity Projectile (HVP), a next generation, common, low drag, guided projectile capable of completing multiple missions for Navy 5-inch guns, Army and Marine Corps 155-mm howitzers, and future electromagnetic (EM) railguns.

The committee understands that the development and fielding of HVP is a priority to address mission requirements for conventional cannon artillery, naval surface fire support, cruise missile defense, anti-ship warfare, and anti-aircraft warfare. The HVP will also be critical to future EM railguns, which could achieve projectile speeds of Mach 6, double that of conventional naval cannons and artillery.

The committee believes that the increased velocity, precision and extended range of the HVP will provide the Navy, Army, and Marine Corps with the capability to address a variety of current and future threats. Coupled with accurate guidance electronics, HVP could provide low cost mission effectiveness against current threats and the ability to adapt to future air and surface threats.

Therefore, the committee directs the Director of the Strategic Capabilities Office, in consultation with the Secretary of the Navy, the Secretary of the Army, and the Commandant of the Marine Corps, to submit a report to the congressional defense committees by December 31, 2018, on the status of the HVP program. The report should include when testing will complete and a description of how HVP could be fielded on current and future naval guns and cannon artillery, including the Extended Range Cannon Artillery (ERCA) Program.

### **Improved Turbine Engine Program**

The committee commends the Army for moving forward with research and development for the Improved Turbine Engine Program (ITEP). The committee notes the importance of this critical program, which is intended to develop a more fuel-efficient and powerful engine for the current UH-60 Black Hawk and AH-64 Apache helicopter fleets. This new engine will substantially increase operational capabilities by increasing range and improving fuel efficiency, while reducing the logistics footprint, resulting in dramatically reduced operating and support costs.

Given the positive progress of this key program, the committee fully supports ITEP in fiscal year 2019.

#### **Land-Based Anti-Ship Missile**

The committee is concerned that the United States has no mobile, land-based anti-ship missile capability. The committee supports the Army's Long-Range Precision Fires modernization effort, in particular its Land-Based Anti-Ship Missile (LBASM) development. The ability to engage and sink enemy ships from as many domains as possible can be a critical capability in a contested maritime environment. The committee strongly encourages the Army to collaborate with the other Services on compatible sensor technology, fire control systems, and networks to maximize the joint force's ability to locate and successfully engage sea-based weapon systems. The committee directs the Secretary of the Army to brief the appropriate defense committees by December 31, 2018, on this program, including how the Services are cooperating and collaborating on this effort.

#### **Military applications for Graphene**

The committee understands that graphene is a promising material that possesses very significant levels of tensile strength, flexibility, transparency, conductivity, and other properties. The committee also understands that initial research demonstrates promising applications for graphene. The committee believes that the Department of Defense (DOD) should pursue research into materials that may provide competitive advantages, particularly against near-peer potential adversaries. The committee believes that the Department should evaluate potential military applications of graphene.

Not later than 180 days after the enactment of this Act, the Under Secretary of Defense for Research and Engineering, in consultation with the Director, Army Research Laboratory; Director, Navy Research Laboratory; and Director, Air Force Research Laboratory, shall provide to the congressional defense committees a report on potential military applications of graphene. The report shall include the following elements: (1) A description of DOD efforts to study graphene; (2) An assessment of the maturity of basic and applied research on graphene; and (3) The potential military applications of graphene for ship and aircraft coatings, land-based and space-based sensors, individual protective equipment, facility blast protection, water and fuel filtration, energy storage, and energy generation in photovoltaic cells.

#### **Modernizing Towed 105 Artillery Systems**

The committee understands that the Army is considering the procurement of a self-propelled 105mm howitzer that could increase the lethality and maintain the mobility of Infantry Brigade Combat Teams. The committee remains concerned about the proliferation of sophisticated quick-fire counter-battery systems, and believes that the system under consideration could provide a substantial improvement to the Army's deterrent posture in Europe. The committee is aware that the system under evaluation incorporates artillery soft recoil technology with existing 105mm artil-

lery systems and then further integrates these technologies onto a light tactical vehicle platform. This approach could enable the Army to achieve significant improvements in combat capability with only modest reinvestment of funding for current or future planned M119 modifications. The committee encourages the Army to continue to review this capability through the Army's cross-functional team or urgent operational needs processes.

#### **Next Generation Health Monitoring System (NGHMS)**

The committee is aware of the Army UH-72 Light Utility Helicopter (LUH) testing of the Next Generation Health monitoring system (NGHMS). The committee understands that initial testing shows the potential for NGHMS to collect maintenance intelligence and prognostics to enable early warning of failing mechanical systems. This information could reduce emergency maintenance costs, provide predictable maintenance schedules, and increase readiness for the LUH fleet.

The committee is aware that recent Army bench testing of the technology was successful. Installation onto LUH platforms for operational testing will begin in March 2018. Specifically, the U.S Army will install NGHMS on 8 Lakota platforms. This initial operational testing is intended to validate increases in readiness and reductions in operating costs. However, to assure proper evaluation across a variety of missions and terrains, the committee encourages the Army to outfit an additional 20 LUH Aircraft with NGHMS and include them with the current test schedule. The committee believes that additional testing will provide critical information and allow for near-term decisions to achieve efficient maintenance structures that foster quality and well-organized fleet management.

#### **Policy issues surrounding emerging technologies for combat and non-combat use**

The committee notes increasing public debate from policymakers and civil society regarding the employment of emerging technologies. The committee applauds technological advancements in fields such as artificial intelligence, unmanned aerial vehicles, facial recognition software, surveillance capabilities, and biological enhancements but encourages the Department of Defense (DOD) to designate an entity to thoroughly examine the policy questions surrounding their use in combat and non-combat scenarios, including potential political, legal, and ethical impacts.

The Department should outline methods of technological usage for new technologies, especially capabilities that utilize the privacy and data of U.S. citizens. For instance, cautionary reports from civil society, academia, and industry warn of the potentially harmful effects of artificial intelligence in the national security space. With the proliferation of drone use and artificial intelligence, the DOD has yet to proactively address questions of application and use. The committee urges the Under Secretary of Defense for Research and Engineering to consider the anticipated application of emerging technologies in combat and non-combat scenarios.

**Rapid-charging hybrid energy storage fuel cells**

The committee acknowledges the availability of advanced hybrid energy storage systems that rapidly charge, allowing more time in the field, providing more effective use of alternative energy sources, and supporting the use of micro-grids for more robust capability. The committee encourages further research of these technologies to enhance system capability.

**Report on Metal Matrix Composites for Army Vehicles**

The committee recognizes the versatility and broad application that Metal Matrix Composite (MMC) Technology provides for the armed services by reducing the weight of parts by fifty percent and increasing the service life by three to four times over traditional steel. The committee recommends that the U.S. Army Tank & Automotive Research, Development, and Engineering Center (TARDEC) continue to test, develop, and field components that can reduce vehicle weight, reduce fuel consumption, increase payload capacity, and extend service life.

The committee further directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide the congressional defense committees a report on the progress of development and implementation of MMC components that can be fielded in Army Ground and Tactical Wheeled Vehicles in order to reduce vehicle weight, reduce fuel consumption, increase payload capacity, and extend service life. This report should be received no later than March 31, 2019.

**Research, development, and procurement of wearable and mobile remote power capabilities**

The committee understands the advantages that remote power capabilities provide to warfighters in the field, especially renewable power sources such as wearable solar panels. Further, the committee understands the benefits this type of combat capability provided through dedicated research and development funding, along with procurement and sustainment resources, to not only the military services, but also improve the mission capabilities of Federal and state law enforcement entities.

Additionally, the committee recognizes the ability of academic and private entities to research and develop remote power capabilities due private sector applications of the technology. Therefore, the committee strongly encourages the Department of Defense to continue to invest resources in academic, private, government entities to research, develop, and deploy portable power capabilities across the military services in support of warfighter needs.

**Soldier Borne Sensor (SBS) Program**

The committee supports the Secretary of the Army's recent emphasis on modernization, particularly the efforts to increase the lethality of our soldiers. Further, the committee is aware that small unit intelligence, surveillance, and reconnaissance capabilities can provide soldiers with critically needed situational awareness particularly in subterranean and Global Positioning System-denied environments. The committee understands that the Soldier Borne Sensor (SBS) program is key to these efforts. Therefore, the

committee directs the Secretary of the Army to provide a report to the Senate Committee on Armed Services by September 30, 2018 on the SBS program. At a minimum, this report shall include a detailed assessment of threshold requirements, objective requirements, and other factors under consideration as the Army makes a determination for the SBS program.

#### **Surrogates for operational testing of torpedoes and torpedo defensive systems**

The committee understands that the Navy routinely conducts in-water operational testing of its anti-submarine torpedoes against manned U.S. Navy submarines. The Director of Operational Test and Evaluation (DOT&E) has indicated that test range safety rules, combined with the inability of U.S. nuclear attack submarines to appropriately emulate threat-representative submarines, limit the operational realism of these test events. The committee notes that since 2013, the Navy, in coordination with the DOT&E, has worked to define the requirements for a mobile set-to-hit torpedo target, but has yet to procure such targets. The committee is concerned that U.S. defenses are not being tested using test assets representative of many highly capable and proliferated threat torpedoes.

Therefore, the committee directs the Secretary of the Navy to deliver to the congressional defense committees not later than March 1, 2019, a plan for the use of threat-representative surrogates for torpedoes and torpedo defensive systems. For fiscal years 2020 through 2024, the plan shall include threats being addressed, test and evaluation activities, budgeted funding, additional funding requirements, and the associated schedule.

#### **Technology and transition accelerators**

The committee recognizes the potential and benefits of the Technology and Transition Accelerators established by the Department of Defense. Technology accelerators, including those efforts under the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Research and Engineering, are aimed at providing opportunities for the Department to leverage public-private partnerships in order to build a network connecting national security challenges with innovators and entrepreneurs. Technology transition accelerators, like the Defense Advanced Research Project Agency's Microsystem Technology Office Transition Accelerator and the Small Business Innovation Research program, strive to improve the business models of small high-tech companies and support researchers in moving technologies from concept to commercialization in order to position them for impact in both the defense and commercial markets. The committee encourages the Undersecretary of Defense for Research and Engineering to review these and other similar activities and assess their potential application to other parts of the research and engineering enterprise.

#### **Trusted and assured microelectronics**

The committee is aware of the importance of the Department of Defense's long-term strategy to ensure trusted and assured supply

chains for defense systems. The committee also recognizes that the Joint Federated Assurance Center (JFAC) provides a bridge between science and technology programs and defense programs, enhancing the Department's ability to rapidly transition microelectronics technology to the joint force. Not later than February 1, 2019, the Assistant Secretary of Defense for Systems Engineering shall provide to the congressional defense committees a briefing on a strategy to optimize and formalize the technology transition process utilizing the JFAC.

#### **Ultra Low Power Deployable Radar**

The committee is aware of efforts undertaken by U.S. Special Operations Command to develop an ultra-low power, rapidly deployable radar to enhance surveillance and reconnaissance missions and to provide small team force protection in austere locations. The committee understands that the military services are exploring the utility of this capability to meet their requirements and looks forward to the results of their review.

#### **Ultra-Lightweight Camouflage Net System**

The U.S. Army and U.S. Marine Corps rely on multispectral camouflage nets to cloak U.S. and allied weapon systems from enemy visual detection, radars, and sensors. Foreign detection devices such as sensors and radars now are overmatching the current camouflage nets and pose an imminent threat to U.S. forces. The committee notes the long standing success of our allied partner nations who employ mobile camouflage systems on their combat vehicles, especially within NATO and the European theater. These relatively inexpensive camouflage net systems provide enhanced signature management protection, reduce heat and temperature inside and around combat vehicles, and yield fuel savings without interfering with the operation of the vehicles.

Army commanders have expressed an immediate operational need for mobile camouflage systems, in woodland, desert, and arctic variants in particular. The committee is aware of the Army's ongoing operational testing of mobile camouflage systems at the National Training Center and elsewhere and encourages further acceleration of those efforts. Given the potential significant advantages of developing this capability, with specific interest towards enhancing interoperability, the committee directs the Secretary of the Army to provide the congressional defense committees, within 90 days of enactment of this Act, with a report which outlines the mobile camouflage system test results and the Army's plan and timeline to fund development, testing, and fielding of these systems to the warfighter.

#### **Workforce and infrastructure for National Defense Strategy priority technologies**

The committee recognizes that the National Defense Strategy identified certain priority emerging technologies (for example, advanced computing, "big data" analytics, artificial intelligence, autonomy, robotics, directed energy, hypersonics, and biotechnology) as having the potential to change the very character of war. The committee has followed this designation with the authorization of

investments in research within these categories within other portions of this Act.

However, the committee urges the Department of Defense (DOD) to prioritize those supporting capabilities that will enable technological progress in these areas—namely, workforce and infrastructure. Too often, these supporting functions are forgotten and research suffers for lack of qualified personnel or test facilities within the DOD laboratories and the Major Range and Test Facility Base.

Therefore, the committee directs the Secretary of Defense to submit a report on workforce and infrastructure needs for the development of each of these priority technologies over the coming five years. The report should include specific shortfalls in each category, if they exist, and recommendations for legislative action if necessary. The report must be submitted by March 15, 2019, to the relevant congressional defense committees.



## **TITLE III—OPERATION AND MAINTENANCE**

### **Subtitle A—Authorization of Appropriations**

#### **Authorization of appropriations (sec. 301)**

The committee recommends a provision that would authorize the appropriations for operation and maintenance activities at the levels identified in section 4301 of division D of this Act.

### **Subtitle B—Energy and Environment**

#### **Further improvements to energy security and resilience (sec. 311)**

The committee recommends a provision that would make further improvements to energy security and resilience within the Department of Defense by ensuring mission assurance is prioritized in energy policy and management. Additionally, the provision would require the development of goals and metrics to assess progress when implementing energy resilience projects.

#### **Funding of study and assessment of health implications of per- and polyfluoroalkyl substances contamination in drinking water by Agency for Toxic Substances and Disease Registry (sec. 312)**

The committee recommends a provision that would amend section 316(a) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) to allow funds to be transferred to the Secretary of Health and Human Services for the study and assessment of health implications of per- and polyfluoroalkyl substances.

#### **Military Mission Sustainment Siting Clearinghouse (sec. 313)**

The committee recommends a provision that would amend section 183a of title 10, United States Code, to clarify that the Military Mission Sustainment Siting Clearinghouse shall be organized under the Under Secretary of Defense for Acquisition and Sustainment. Additionally, this provision encourages the Military Mission Sustainment Siting Clearinghouse to prioritize pilot safety when evaluating energy projects. The committee understands the immense workload of the clearinghouse and therefore, recommends a \$1.0 million funding increase for the Clearinghouse office as specified in the funding tables.

#### **Operational energy policy (sec. 314)**

The committee recommends a provision that would amend section 2926 of title 10, United States Code, to provide a comprehensive operational energy policy and to promote the development and

acquisition of equipment that enhances energy security and energy resilience.

**Funding treatment of perfluorooctane sulfonic acid and perfluorooctanoic acid at State-owned and operated National Guard installations (sec. 315)**

The committee recommends a provision that would authorize the Secretary of Defense to treat perfluorooctane sulfonic acid and perfluorooctanoic acid in drinking water at State-owned and operated National Guard installations with several limitations. The provision would also authorize the National Guard access to environmental restoration funds.

The committee notes that this provision does not reflect any intent of serve as a statement on government liability. This is a process for funding to address a very specific and severe health concern. The committee takes no stance on pending court cases between the federal government and state and local municipalities. The committee hopes that the lessons learned from this incident by all parties involved will prevent such an event from occurring in the future.

**Subtitle C—Reports**

**Reports on readiness (sec. 321)**

The committee recommends a provision that would modify the Quarterly Readiness Report to Congress (QRRC) to establish a tracking mechanism for the number of monthly C-level upgrades or downgrades by a unit commander. The provision would also separate the annex on operational contract support and make it a standalone annual report in order to decrease the delivery time of the QRRC.

**Report on cold weather capabilities and readiness of United States Armed Forces (sec. 322)**

The committee recommends a provision that would direct the Secretary of Defense to submit to the congressional defense committees a report on the current cold weather capabilities and readiness of the United States Armed Forces not later than 180 days after the date of the enactment of this Act.

**Subtitle D—Other Matters**

**Pilot programs on integration of military information support and civil affairs activities (sec. 331)**

The committee recommends a provision that would authorize the commanders of the geographic combatant commands and U.S. Special Operations Command to carry out pilot programs for the integration of military information support and civil affairs activities in support of the theater campaign plans of such combatant command.

The committee believes that Department of Defense civil affairs and military information support activities are complementary and are important tools to support the military objectives of the combatant commands. These efforts can be better leveraged to provide

whole of government solutions to a rapidly evolving global security environment.

The committee also notes that the process for funding the execution of military information support and civil affairs activities often does not align with operational timelines or involves fiscal authorities that are misaligned to the purpose of the activity. The fiscal authority provided under this pilot program would provide a flexible and more appropriate means for funding military information support and civil affairs activities while also incentivizing whole of government solutions in support of U.S. messaging and stabilization objectives.

**Reporting on future years budgeting by subactivity group (sec. 332)**

The committee recommends a provision that would direct the Secretary of Defense and the secretaries of the military departments to include in their OP-5 Justification Books the amount for each subactivity group as detailed in the Department of Defense's future years defense program.

The committee notes that other Justification Books, such as those for Procurement and Research, Development, Testing, and Evaluation, currently contain this information.

**Restriction on upgrades to aviation demonstration team aircraft (sec. 333)**

The committee recommends a provision that would prohibit the Secretary of Defense from upgrading the type, model, or series of aircraft used by a military service for its fixed wing aviation demonstration teams, including the Blue Angels and Thunderbirds aircraft, until the Service's active and reserve duty squadrons and weapons training schools have replaced 100 percent of the existing type, model, and series of aircraft unless the Secretary grants a waiver to upgrade for the purposes of pilot safety.

**U.S. Special Operations Command civilian personnel (sec. 334)**

The committee recommends a provision that would require that, of the funds authorized in Operation & Maintenance, Defense-wide for U.S. Special Operations Command civilian personnel, not less than \$6.2 million shall be used to fund the detail of civilian personnel to the office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC) to support the Secretariat for Special Operations.

The committee remains concerned that current civilian manpower within the ASD SOLIC is not sufficient to fulfill the "service secretary-like" responsibilities for the advocacy and oversight of special operations forces mandated by section 922 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328). According to a report required by section 1074 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), an independent manpower study by the U.S. Army Manpower Analysis Agency determined that a total of 64 civilian personnel could be required to execute the "service secretary-like" responsibilities required of the ASD SOLIC by law. According to the same re-

port, only 14 personnel are currently assisting the ASD SOLIC for the fulfillment of these responsibilities.

The committee is concerned that the number of civilian personnel assigned to U.S. Special Operations Command (SOCOM) continues to grow, including a planned increase of 128 civilian personnel in fiscal year 2019. The committee notes that the establishment of the ASD SOLIC Secretariat for Special Operations should result in administrative and oversight efficiencies and the transfer of functions that are more appropriately conducted by the ASD SOLIC. This provision is intended to facilitate the transfer of no fewer than 50 civilian personnel from SOCOM to the ASD SOLIC for support of the Secretariat for Special Operations.

**Limitation on availability of funds for service-specific Defense Readiness Reporting Systems (sec. 335)**

The committee recommends a provision that would restrict the Department of Defense funds to operate service-specific Defense Readiness Reporting Systems (DRRS) until the Secretary of Defense submits a resource and funding plan to eliminate service-specific DRRS.

The committee notes that according to chapter 2 of title 10, United States Code, as amended by the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105–261), DRRS was to be “applied uniformly throughout the Department of Defense.” The committee is concerned that the military services are not adhering to the prescribed law by having separate readiness reporting systems, even though they all bear the same name. The committee notes that since each service, with the exception of the Air Force, operates its own system separate from the Office of the Secretary of Defense and Joint Staff, it is difficult and time consuming to capture a real-time, accurate readiness rating.

**Repurposing and reuse of surplus Army firearms (sec. 336)**

The committee recommends a provision that would amend section 348(b) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) by inserting “shredded or” before “melted and repurposed”.

The committee notes the provision would grant the Army flexibility to better control costs when conducting scheduled demilitarizing of surplus firearms.

**Limitation on availability of funds for establishment of additional specialized undergraduate pilot training facility (sec. 337)**

The committee recommends a provision that would limit funds to establish a new specialized undergraduate pilot training location until the Secretary of the Air Force submits a prescribed certification. The provision would also require the Secretary of the Air Force to submit a report on specialized undergraduate pilot training production, resourcing, and locations.

**Scope of authority for restoration of land due to mishap  
(sec. 338)**

The committee recommends a provision that would amend section 2691 of title 10, United States Code, to clarify vehicle crashes must meet the regulations of the Federal department with administrative jurisdictions of the affected land.

**Redesignation of the Utah Test and Training Range (UTTR)  
(sec. 339)**

The committee recommends a provision that would allow the Utah Test and Training Range located in northwestern Utah and eastern Nevada to be redesignated.

**Subtitle E—Logistics and Sustainment**

**Limitation on modifications to Navy Facilities Sustainment,  
Restoration, and Modernization (FSRM) structure and  
mechanism (sec. 351)**

The committee recommends a provision that would prohibit the Secretary of the Navy from making any modifications to the existing Navy Facilities Sustainment, Restoration, and Modernization (FSRM) structure until 90 days after providing notice of the proposed FSRM modification to the congressional defense committees.

**Budget Items**

**United States Southern Command unfunded priorities in-  
crease**

The budget request included \$51.3 billion in Operation and Maintenance, Army (OMA), of which \$1.3 billion was for SAG 411 Security Programs.

The committee notes that United States Southern Command (SOUTHCOM) identified intelligence, surveillance, and reconnaissance as an unfunded priority.

Accordingly, the committee recommends an increase in OMA of \$14.3 million for SAG 411 Security Programs for SOUTHCOM airborne intelligence, surveillance, and reconnaissance.

**Army marketing and advertising reduction**

The budget request included \$42.0 billion in the Operation and Maintenance, Army (OMA), of which \$698.9 million was for SAG 331 Recruiting and Advertising.

The committee continues to be concerned with the Army's lack of oversight and inability to track performance metrics in its recruiting, marketing, and advertising efforts. The committee is also concerned by the lack of contracting professionals employed by the Army Marketing and Research Group and expects the Army to take appropriate accountability measures on those contracts that were awarded inappropriately. The committee notes the requested resources could be better aligned for other readiness priorities.

Accordingly, the committee recommends a decrease of \$200.0 million in OMA to SAG 331 Recruiting and Advertising.

### **Army Operation and Maintenance budget request for civilian pay**

The budget request included \$51.3 billion for Operation and Maintenance, Army.

The Office of Inspector General released a study in March 2018 that found the Army has under executed its civilian pay budget for the last 3 fiscal years, mainly due to the Army's non-compliance with Office of Management and Budget (OMB) and Office of the Secretary of Defense guidance.

Specifically, the Inspector General found that the adjustments applied to the basic compensation calculation were normally not permitted by OMB policy and overtime was not included in the Army budget request. Additionally, army officials utilized excess civilian compensation to pay for underfunded non-pay operating expenses, intentionally not hiring up to the Army's civilian personnel authorizations.

The Army under-executed the civilian pay requested in the fiscal year 2017 President's Budget by \$481.5 million, which was the most the Army has under-executed in the last 3 years.

Accordingly, the committee recommends a decrease of \$200.0 million to Operation and Maintenance, Army.

### **United States Southern Command unfunded priorities increase for sensor integration**

The budget request included \$56.8 billion in Operation and Maintenance, Navy (OMN), of which \$1.4 billion was for SAG 1C1C Combat Communications and Electronic Warfare.

The committee notes that United States Southern Command (SOUTHCOM) identified intelligence, surveillance, and reconnaissance as an unfunded priority.

Accordingly, the committee recommends an increase in OMN of \$1.7 million for SAG 1C1C Combat Communications and Electronic Warfare for SOUTHCOM airborne intelligence, surveillance, and reconnaissance.

### **Enterprise information reduction**

The budget request included \$49.0 billion in Operation and Maintenance, Navy, of which \$921.9 million was for SAG BSIT Enterprise Information.

Accordingly, the committee recommends a decrease of \$45.0 million to SAG BSIT Enterprise Information for a general reduction.

### **Navy facilities, sustainment, restoration, and modernization increase**

The budget request included \$49.0 billion in Operation and Maintenance, Navy (OMN), of which \$2.0 billion was for SAG BSM1 Sustainment, Restoration, and Modernization.

The committee notes the importance of maintaining the crucial facilities that support the warfighter both in the United States and overseas. The committee believes facilities, sustainment, restoration, and modernization (FSRM) funding is crucial to rebuilding and maintaining readiness.

Accordingly, the committee recommends an increase of \$406.0 million to SAG BSM1 for FSRM.

### **F-35 depot component repair capability**

The budget request included \$42.1 billion in Operation & Maintenance, Air Force (OMAF), of which \$758.2 million was for SAG 11A Air Operations, Primary Combat Forces and Support.

The committee remains concerned by the Not Mission Capable—Supply (NMC-S) rates of the F-35 Joint Strike Fighter. In part, the high NMC-S rates are due to a lack of adequate repair capacity. As the Government Accountability Office (GAO) noted in a report published on October 26, 2017, titled “F-35 Aircraft Sustainment: DOD Needs to Address Challenges Affecting Readiness and Cost Transparency” (GAO-18-75), “DOD does not have enough capacity to repair F-35 aircraft parts because the establishment of repair capabilities at the military depots is 6 years behind schedule” (page 12). The report goes on to say, “Program officials in part attributed these delays to the military services not providing enough funding for depot requirements; however, service officials told us the program office did not clearly identify some depot requirements in a timely manner necessary for the services to fund those requirements” (page 13).

Despite the clear and obvious shortcomings in F-35 sustainment, the committee is not convinced that the program office and the Services are adequately addressing the problems, including providing adequate funding to stand up depot component repair capabilities and purchase the necessary lay-in material, both of which are years behind schedule.

Therefore, the committee recommends an increase of \$25.0 million in OMAF to SAG 11A Air Operations, Primary Combat Forces and Support for the stand up of depot component repair capabilities.

### **Air Force demolition increases**

The budget request included \$42.0 billion in Operation and Maintenance, Air Force (OMAF), of which \$2.9 billion was for SAG 11R Real Property Maintenance. The budget request also included \$3.3 billion in Operation and Maintenance, Air Force Reserve (OMAFR), of which \$120.7 million was for SAG 11R Real Property Maintenance.

The committee notes the importance of Department of Defense infrastructure to supporting operational readiness. The committee is concerned, however, that the Department is not allocating proper resources for demolishing older buildings that are not in use but still require crucial resources to maintain.

Accordingly, the committee recommends increases of \$25.0 million to SAG 11R in OMAF for demolition and \$2.8 million to SAG 11R in OMAFR for demolition.

### **Joint Surveillance Target Attack Radar System weapons system sustainment**

The budget request included \$42.1 billion in Operation & Maintenance, Air Force (OMAF), of which \$3.8 billion was for SAG 11W Air Operations, Contractor Logistics Support and System Support.

The budget request included the retirement of three E-8C Joint Surveillance Target Attack Radar System (JSTARS) aircraft. Else-

where in this Act, the committee recommends a provision that would prohibit the retirement of any E-8C JSTARS aircraft.

Therefore, the committee recommends an increase of \$95.9 million in OMAF to SAG 11W Air Operations, Contractor Logistics Support and System Support to restore reductions associated with the divestment of three E-8C JSTARS aircraft.

#### **Air Force weapon system sustainment increases**

The budget request included \$42.0 billion in Operation and Maintenance, Air Force (OMAF), of which \$3.8 billion was for SAG 11W Contractor Logistics Support and System Support. The budget request also included \$3.3 billion in Operation and Maintenance, Air Force Reserve (OMAFR), of which \$241.2 million was for SAG 11W Contractor Logistics Support and System Support.

The committee notes the importance of weapon system sustainment (WSS) to ensure the Air Force's crucial weapon systems that support the warfighter are at the highest readiness rating possible. The committee notes that the Air Force has additional execution capability to bring WSS to 100 percent for the active component and 91 percent for the reserve component.

Accordingly, the committee recommends increases of \$550.0 million to SAG 11W Contractor Logistics Support and System Support OMAF for WSS and \$52.0 million to SAG 11W Contractor Logistics Support and System Support in OMAFR for WSS.

#### **Joint Surveillance Target Attack Radar System flight hours**

The budget request included \$42.1 billion in Operation & Maintenance, Air Force (OMAF), of which \$4.4 billion was for SAG 11Y Air Operations, Flying Hour Program.

The budget request included the retirement of three E-8C Joint Surveillance Target Attack Radar System (JSTARS) aircraft. Elsewhere in this Act, the committee recommends a provision that would prohibit the retirement of any E-8C JSTARS aircraft.

Therefore, the committee recommends an increase of \$50.0 million in OMAF to SAG 11Y Air Operations, Flying Hour Program to restore flying hour reductions associated with the divestment of three E-8C JSTARS aircraft.

#### **Deployable airbase systems**

The budget request included \$42.1 billion in Operation and Maintenance, Air Force.

As part of its strategic approach for addressing long-term strategic competition with China and Russia, the National Defense Strategy calls for building a more lethal force, including investments in forward force maneuver, posture resilience, and resilient and agile logistics. The objectives of these investments are to ensure that U.S. forces can “deploy, survive, operate, maneuver, and regenerate in all domains while under attack” and conduct “logistics sustainment while under persistent multi-domain attack.” Meeting these objectives will require a transition “from large, centralized, unhardened infrastructure to smaller, dispersed, resilient, adaptive basing that include active and passive defenses” as well as an emphasis on “prepositioned forward stocks and munitions,

strategic mobility assets,” and “distributed logistics and maintenance.”

Consistent with the priorities set forth in the National Defense Strategy, the committee has fully supported resiliency efforts such as the repositioning of European contingency air operations set deployable airbase Systems, which is part of the European Deterrence Initiative, to complement and enhance the theater-wide response capability of the U.S. Air Force in Europe.

However, the committee is concerned that the appropriate level of investment in similar resiliency efforts in the Indo-Pacific region has not materialized. U.S. force posture in the Indo-Pacific region remains heavily concentrated in Northeast Asia within range of China’s advanced arsenal of ballistic and cruise missiles, posing a significant risk to forward-stationed forces, to the ability of the joint force to execute the contingency plans of the Department of Defense, and to the credibility of U.S. deterrence in the Indo-Pacific region.

As a result, Admiral Harry Harris, Commander, U.S. Pacific Command (PACOM), identified force posture initiatives focused on resiliency as critical requirements in his letter to the committee of February 22, 2018, concerning PACOM’s unfunded priority list and in his testimony to the committee on March 15, 2018.

Therefore, the committee supports the procurement of seven deployable airbase systems in fiscal year 2019 to be repositioned forward in the PACOM area of responsibility in order to support the priorities of the National Defense Strategy and PACOM’s “resiliency” and “agile logistics” force posture initiatives, as well as to enhance the credible combat power of U.S. forces in the Indo-Pacific region.

Accordingly, the committee recommends an increase of \$156.8 million in Operation and Maintenance, Air Force.

#### **Joint Surveillance Target Attack Radar System personnel**

The budget request included \$6.4 billion in Operation & Maintenance, Air National Guard (OMANG), of which \$2.6 billion was for SAG 11F Aircraft Operations.

The budget request included the retirement of three E-8C Joint Surveillance Target Attack Radar System (JSTARS) aircraft. Included in the divestment is a cost of \$1.6 million and 16 Full Time Employees. Elsewhere in this Act, the committee recommends a provision that would prohibit the retirement of any E-8C JSTARS aircraft.

Therefore, the committee recommends an increase of \$1.6 million in OMANG to SAG 11F Aircraft Operations to restore the cuts associated with the divestment of three E-8C JSTARS aircraft.

#### **Air National Guard increase per- and polyfluoroalkyl substance environmental restoration funding transfer**

The budget request included \$6.4 billion in Operation and Maintenance, Air National Guard (OMANG), of which \$988.3 million was for SAG 11Z Base Support.

The committee continues to support the Air Force’s environmental services efforts to remediate and cleanup per- and polyfluoroalkyl substances (PFAS).

Accordingly, as requested by the Air Force, the committee recommends an increase of \$11.0 million in OMANG to SAG 11Z for environmental compliance to remediate and cleanup PFAS.

The committee notes a matching amount of \$11.0 million will be decreased in the tables from Environmental Restoration, Air Force SAG 42G to reflect the transfer.

#### **Plan for incorporating logistics sustainment under attack into war games**

The budget request included \$28.6 million in Operations and Maintenance, Defense-Wide (OMDW) for SAG 1PL1 Joint Chiefs of Staff.

The committee recognizes that the National Defense Strategy's focus on near-peer adversaries fundamentally challenges long-held assumptions around uncontested logistics sustainment. The committee urges the Department of Defense to incorporate appropriate and realistic assumptions around logistics and transportation into operational war gaming.

The committee encourages the Secretary of Defense, in coordination with the Chairman of the Joint Chiefs of Staff, to integrate contested logistics and offset technologies into exercises carried out by the military departments. These exercises should include an identification of common assumptions for logistics sustainment based on joint and individual recommendations of United States Transportation Command and of the military departments. It is also important to include a method for capturing lessons learned and providing feedback to the Joint Staff and military departments following the completion of these exercises. Where possible, the committee encourages the inclusion of commercial sector partners critical to logistics and sustainment in these wargames.

Further, the committee is supportive of the Department of Defense's plans to hold a joint table-top exercise to specifically evaluate the effects of energy denial on the generation, deployment, employment, and sustainment of combat forces. This joint table-top exercise for a scenario in the Pacific theater will be designed to thoroughly examine multiple seams and the challenges associated with delivery of energy over the last tactical mile. Given the fact that power and energy are increasingly essential to the employment of military capabilities, and new technologies identified in the National Defense Strategy, the committee recognizes and strongly supports the Department's efforts to plan this exercise and strongly encourages the Department to continue to comprehensively assess the impacts of operating in an energy denied or restricted environment.

Accordingly, the committee recommends an increase of \$2.5 million in OMDW to SAG 1PL1 Joint Chiefs of Staff.

#### **Defense Security Service**

The budget request includes \$789.2 million in Operations and Maintenance, Defense-wide, for the Defense Security Service (DSS). The committee notes that DSS has identified shortfalls in critical positions that are focused on the protection of classified information, technologies, and material in the hands of cleared industry.

Accordingly, the committee recommends an increase of \$18.6 million in Operations and Maintenance, Defense-wide, for 129 additional civilian full time equivalent positions to support DSS efforts to protect classified information, technologies, and material in the hands of cleared industry.

#### **Personnel security background investigations**

The budget request includes \$789.2 million in Operations and Maintenance, Defense-wide (OMDW), for SAG 4GTE Defense Security Service (DSS).

The committee notes that the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) directed DSS to undertake an additional mission of background investigations and personnel security for Department of Defense personnel. This transition will require dedicated resources to ensure the smooth transfer of responsibilities, and to bridge the gap between the Department of Defense and the National Background Investigations Bureau as the transfer takes place. The addition of this mission will levy an additional duty on an already heavily-taxed Defense Security Service, with broad responsibilities across the defense industrial base.

Accordingly, the committee recommends an increase of \$45.0 million to OMDW, for SAG 4GTE to support DSS efforts to establish these capabilities, which may be deployed toward transition-focused workforce or developing supporting analytic tools, as approved by the security executive agent, as necessary.

#### **Funding for impact aid**

The budget request included \$2.89 billion in the Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTJ) for the operations of the Department of Defense Education Activity. The amount authorized to be appropriated for OMDW includes the following changes from the budget request. The provisions underlying these changes in funding levels are discussed in greater detail in title V of this committee report.

[Changes in millions of dollars]

Impact aid for schools with military dependent students .....	+40.0
Impact aid for children with severe disabilities .....	+10.0
Total .....	+50.0

#### **Center for Disease Control study increase**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN).

The National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), required the Office of the Secretary of Defense to conduct a Center for Disease Control (CDC) nationwide health study on per- and polyfluoroalkyl contamination in drinking water.

Accordingly, the committee recommends an increase of \$10.0 million in OMDW to SAG 4GTN Office of the Secretary of Defense to continue the CDC health study.

### **Department of Defense Siting Clearinghouse increase**

The budget request included \$1.5 billion in the Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which \$1.6 million was for the Department of Defense (DOD) Siting Clearinghouse.

The committee continues to support the mission of the office. However, the committee is also concerned that DOD has not allocated sufficient resources to the office given its workload and high number of projects.

Accordingly, the committee recommends an increase of \$1.0 million to SAG 4GTN for the DOD Siting Clearinghouse. The committee encourages the Clearinghouse to make pilot safety a top priority and to continue to ensure that construction projects do not significantly compromise flight operations without appropriate mitigating action.

### **Defense Environmental International Cooperation program increase**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which no funds were for the Defense Environmental International Cooperation (DEIC) program.

The committee continues to note that the Army National Guard and other military units are frequently called upon to respond to humanitarian assistance and disaster relief (HA/DR) crises around the world. The DEIC program enables the Army National Guard to share best practices and lessons learned from its own HA/DR missions with U.S. allies. This important program promotes and develops allied HA/DR capability for a relatively small amount of money.

For example, given current readiness challenges within the United States Southern Command and its limited bandwidth to respond to HA/DR missions, the Army National Guard has used the DEIC program to provide training and capability development to countries within the region to remove debris and otherwise respond in the event of an earthquake or hurricane. The committee continues to support the DEIC program and disagrees with DOD's intent to terminate a low-cost and useful training program for the Army National Guard.

Accordingly, the committee recommends an increase of \$1.0 million to SAG 4GTN for DEIC.

### **Department of Defense emerging contaminants increase**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which \$964,000 was for Department of Defense (DOD) emerging contaminants.

The committee continues to support the mission of the office to study, analyze and evaluate threats to warfighters and their families. However, the committee is also concerned that DOD has not allocated enough resources to the office given its workload and the likelihood that DOD will have to address an increasing number of emerging contaminants in the future—for example, 1,4 Dioxane, Perfluorohexane sulfonic acid, and 1,2,3- Trichloropropane—much

like it has with per- and polyfluoroalkyl substances in sources of drinking water.

Accordingly, the committee recommends an increase of \$1.0 million to SAG 4GTN for the DOD emerging contaminants.

#### **Department of Defense environmental resiliency increase**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which only \$743,000 was for Department of Defense (DOD) environmental resiliency efforts.

The committee continues to support the mission of the office to study, analyze, evaluate, and provide technical support to warfighters and installations as environmental challenges continue to cost DOD significant resources and readiness. However, the committee is also concerned that DOD has not allocated enough resources to the office given its workload and the likelihood that DOD will have to address environmental resilience challenges.

Accordingly, the committee recommends an increase of \$1.0 million to SAG 4GTN for DOD environmental resiliency efforts.

#### **Department of Defense rewards program reduction**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which \$3.5 million was for the Department of Defense (DOD) rewards program.

The committee continues to be concerned that the DOD rewards program has been hampered by historical under-execution.

Accordingly, the committee recommends a decrease of \$3.0 million to SAG 4GTN for the DOD rewards program.

#### **Readiness and Environmental Protection Initiative**

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN), of which \$75.0 million was for the Readiness and Environmental Protection Initiative (REPI).

The committee notes that encroachment resulting from incompatible development and loss of habitat continues to pose a major long-term threat to readiness and to the viability of military installations, ranges, and airspace throughout the country. REPI involves partnerships between the Department of Defense (DOD), state and local governments, and conservation organizations to share the costs of acquiring protective easements from willing landowners.

The committee continues to support the mission of REPI and believes the program has proven to be highly effective in addressing encroachment. The committee supports the Department's evaluation of REPI to "protect mission capability by cost-sharing the long-term protection of high-value habitat and limiting incompatible land uses around DOD ranges and installations" and "help avoid more expensive costs, such as the need for training workarounds or segmentation and future military construction to modify or relocate training assets to less-restricted locations," as stated in the President's 2019 budget.

However, the committee is concerned that the Department continues to underfund REPI despite its success to date and the high

degree of leverage from partner contributions. Additionally, the Department has expressed concerns about the growing need to protect key installations, ranges, and airspace, yet has failed to match those concerns with adequate resources.

Accordingly, the committee recommends an increase of \$25.0 million to SAG 4GTN for REPI and strongly encourages the Department to reflect in future REPI budget requests the urgency of the problem of encroachment and the success REPI has provided in addressing that problem.

#### **Air Force decrease per- and polyfluoroalkyl substance environmental restoration funding transfer**

The budget request included \$296.8 million in Environmental Restoration, Air Force. The committee continues to support the Air Force's environmental services efforts to remediate and cleanup per- and polyfluoroalkyl substances (PFAS).

Accordingly, as requested by the Air Force, the committee recommends a decrease of \$11.0 million in Environmental Restoration, Air Force to SAG 042G for environmental compliance to remediate and cleanup PFAS.

The committee notes a matching amount of \$11.0 million will be increased in the tables to Air National Guard SAG 11Z Base Support to reflect the transfer.

#### **Foreign currency fluctuations**

The budget request included \$199.5 billion for Operation and Maintenance.

The committee believes that when foreign currency fluctuation (FCF) rates are determined by the Department of Defense, the balance of the FCF funds should be considered. Accordingly, the committee recommends an undistributed decrease of \$267.0 million for FCF.

#### **Junior Reserve Officers' Training Corps increase**

The budget request included \$80.2 billion in Operations and Maintenance, Defense-wide, of which \$138.3 million was for Junior Reserve Officers' Training Corps (JROTC).

The committee believes JROTC programs are an important program for the nation and have been historically underfunded by the Department of Defense.

Accordingly, the committee recommends an increase of \$5.48 million in Operations and Maintenance, Defense-wide for Junior Reserve Officers' Training Corps programs.

#### **Air Force Per- and Polyfluoroalkyl substances cleanup**

The budget request did not include funding in Undistributed Operation and Maintenance.

Accordingly, the committee recommends an increase of \$10.0 million to Undistributed Operation and Maintenance, Air Force for the cleanup of Per- and Polyfluoroalkyl substances at certain National Guard locations.

**Air National Guard Per- and Polyfluoroalkyl substances cleanup**

The budget request did not include funding in Undistributed Operation and Maintenance.

Accordingly, the committee recommends an increase of \$15.0 million to Undistributed Operation and Maintenance, Air National Guard for the cleanup of Per- and Polyfluoroalkyl substances at certain National Guard locations.

**Army Per- and Polyfluoroalkyl substances cleanup**

The budget request did not include funding in Undistributed Operation and Maintenance.

Accordingly, the committee recommends an increase of \$10.0 million to Undistributed Operation and Maintenance, Army for the cleanup of Per- and Polyfluoroalkyl substances at certain National Guard locations.

**Navy Per- and Polyfluoroalkyl substances cleanup**

The budget request did not include funding in Undistributed Operation and Maintenance.

Accordingly, the committee recommends an increase of \$10.0 million to Undistributed Operation and Maintenance, Navy for the cleanup of Per- and Polyfluoroalkyl substances at certain National Guard locations.

**Items of Special Interest****Air Force runway infrastructure**

The committee believes that the Air Force's physical runway infrastructure is an essential component of the readiness of U.S. operational and strategic forces. The committee believes that the maintenance of such assets is critical to launching aircraft quickly and effectively across a variety of mission areas. The committee is concerned by multiple examples where the Air Force has yet to or is addressing these requirements without urgency.

In particular, the committee notes the continued operation of Offutt Air Force Base, the 55th Air Wing, and the operations at U.S. Strategic Command are essential to America's continued national security. As such, the committee believes the current effort to design and execute a planned repair or rebuild of the runway is critical, and should be executed with the utmost speed, resourcing, and diligence. In addition, the committee notes the Little Rock Air Force Base provides a unique and crucial capability, serving as the nation's tactical airlift "Center of Excellence." The continued successful operation of Little Rock Air Force Base is contingent on having a fully functioning runway, and the committee similarly highlights the importance of its expeditious completion.

The committee is concerned the Air Force lacks an overall runway infrastructure plan to address its ongoing runway maintenance issues, and if it is not addressed, failing runways will lead to a direct impact on operational readiness.

Accordingly, the committee directs the Secretary of the Air Force to conduct an assessment and provide a briefing to the congressional defense committees no later than February 1, 2019, detailing

the operational requirements for Air Force airfields in addition to the state of airfields where runway degradation currently poses a threat to operations, as well as installations where such degradation threatens operations in the five and ten year time frames. The briefing shall include the operational requirement for airfields, an assessment of the impact to operations, cost to repair, cost to replace, remaining useful life, and narrative on the required daily maintenance to ensure the runway is acceptable for full operations at the installation, and any challenges with infrastructure acquisition methods and processes. The briefing shall also include the operational impact if the respective runway became inoperable due to a major degradation incident, such as a crack or fracture resulting from lack of maintenance and repair. Finally, the briefing shall include a plan to address any shortfalls associated with the Air Force's runway infrastructure.

If required, a classified annex may accompany the unclassified briefing.

#### **All services marketing audit**

The committee notes the importance of effective marketing and recruiting efforts to ensure adequate end strength and technical capabilities of the military services. The committee notes that in 2016, the U.S. Army Audit Agency (AAA) began two internal audits of the Army Marketing and Research Group (AMRG), both of which recently concluded. The committee understands that the audits indicate that the AMRG wasted a significant amount of money on ineffective marketing programs.

Given the results of the AAA audits of the AMRG, the committee is concerned that similar problems may exist in the other Services' marketing organizations. Accordingly, the committee directs the Secretary of the Navy to engage the Naval Audit Service and the Secretary of the Air Force to engage the Air Force Audit Agency to undertake similar individual audits of the Navy, Marine Corps, and Air Force marketing groups and submit a report to the congressional defense committees not later than February 1, 2019. At a minimum, the report shall include: (1) The effectiveness of advertising programs in the different Services at recruiting and retaining candidates; (2) An analysis of how efficiently the Services' advertising organizations spend their money; (3) Any best practices that can be shared between the Services to ensure better advertising practices; and (4) Any additional areas of concern that the auditing agencies deem appropriate.

Additionally, the committee directs the Comptroller General of the United States to conduct a review of the final audits upon their release and submit a report to the Committees on Armed Services of the Senate and the House of Representatives not later than April 1, 2019.

#### **Ammunition plant reform and stockpile of explosives**

The committee is concerned that modernization project delays at Holston Army Ammunition Plant may have created a temporary over reliance on foreign sources for trinitrotoluene (TNT) as it relates to ammunition and munitions production. The committee strongly encourages the Department to begin domestic production

of insensitive munitions explosives (IMX) as soon as possible in order to improve the posture of the ammunition production industrial base and restore war reserve stockpiles. Additionally, the committee encourages the Department to explore any appropriate use of the Defense Production Act as it relates to any strategic stockpiling of TNT and IMX.

The committee commends the Department of the Army on its continued efforts to make the organic Government Owned Contractor Operated ammunition production facilities more competitive, efficient, and cost-effective through constant reforms. While progress has been made, there are still areas upon which costs and process can be improved through further reform in order to reduce overhead. The committee encourages the Department to continue to work with industry for further and appropriate reforms. For example, the committee notes that all Armament Retooling and Manufacturing Support contracts are not identical with respect to how revenues are treated at different facilities. The committee encourages the Department to standardize such contracts to the maximum extent practicable.

Accordingly, the committee directs the Secretary of the Army to submit a report to the congressional defense committees no later than September 1, 2018, on initiatives the Department plans to take in order to make ammunition production facilities more competitive and efficient.

#### **Arctic search and rescue**

The committee is aware that growing international interest and changing environmental conditions in the Arctic have led to increased commercial and governmental activity in the High North. With this steady surge, the committee remains concerned by the limited capabilities of the United States to conduct search-and-rescue operations throughout the Arctic region. The committee notes that the Department of Defense's Report to Congress on Strategy to Protect United States National Security Interests in the Arctic Region, a report required in section 1068 of the National Defense Authorization Act for Fiscal Year 2016 (Public-Law 114-92), identified the need for additional personnel recovery capability in this region. Specifically, the report calls for "forward-deployed/based assets in a sustainable location and/or rapidly deployable air drop response/sustainment packages suitable to remote land, cold water, or ice pack operating environments."

The committee understands that the 176th Wing of the Alaska National Guard is the closest dedicated response force with the only refueling capability to respond to a search-and-rescue incident in the Arctic. The unit currently possesses two air-dropped, palletized Arctic Sustainment Packages (ASPs) to enable the survival of 50 individuals for 3 or more days in extreme Arctic conditions. The ASP is rapidly deployable over varied terrain, and allows personnel to survive and operate in the High North. Each ASP requires considerable resources for sustainability, demanding 500 man-hours to re-pack ASPs after testing and to continually keep contents viable. In light of the increased activity in this region, the committee believes that this capability could benefit from addi-

tional sustainment funding to maintain the two existing ASPs, and encourages the Secretary of Defense to prioritize its resourcing.

#### **Assessment of assigning a Security Force Assistance Brigade to U.S. Africa Command**

The committee understands that the Army intends to establish six Security Force Assistance Brigades (SFAB) for the purpose of providing geographic combatant commanders with a capability to train, advise, and assist foreign security partners. The committee notes that U.S. Africa Command does not currently have assigned forces to support requirements within its area of responsibility and relies on forces allocated through the Global Force Management process.

As such, the committee directs the Secretary of Defense, no later than 90 days after the date of the enactment of this Act, to submit to the congressional defense committees an assessment of the advisability and feasibility of assigning an SFAB on an enduring basis to U.S. Africa Command for the purpose of supporting the security cooperation activities of the Command. The assessment shall also include a comparison of the relative merits of utilizing an SFAB to support security cooperation activities as compared to other conventional Army units, including a Brigade Combat Team, and Special Operations Forces.

#### **Assessment of Department of Defense installation management**

The committee notes that the Department of Defense (DOD) maintains over 550,000 facilities on about 28 million acres with an estimated plant replacement value of about \$830.0 billion. The committee understands that the Government Accountability Office (GAO) has had DOD's defense support infrastructure portfolio on its high-risk list since 1997 due in part to the large financial commitment needed to maintain this vast portfolio, and DOD's continuing holding of unneeded real property assets and chronic underfunding of facilities sustainment.

The committee is concerned with the financial commitment needed to maintain all of these facilities when DOD believes so many are excess to need. Prior GAO reports raise questions about the effectiveness of DOD's real property assets management. The report from GAO entitled, "Excess Facilities: DOD Needs More Complete Information and a Strategy to Guide its Disposal Efforts" (GAO-11-814) found DOD had utilization rate data for only 46 percent of its facilities and no strategy for disposing of excess facilities after the fiscal year 2013 end of its demolition program. GAO also found that DOD was considering a broader approach to facilities management, including consolidation where possible. Yet in the September 2014 report, "Defense Infrastructure: DOD Needs to Improve Its Efforts to Identify Unutilized and Underutilized Facilities" (GAO-14-538), GAO reported that DOD had only improved its facilities utilization data from 46 percent of facilities to 53 percent.

Knowing the utilization of existing facilities is an important prerequisite to effective consolidation. In the June 2015 report "Underutilized Facilities: DOD and GSA Information Sharing May Enhance Opportunities to Use Space at Military Installations" (GAO-

15–346), GAO reported that neither DOD nor the General Services Administration had a process by which federal agencies could be housed in excess DOD space, a practice that permits the host installation to avoid the utilities and maintenance costs they would have otherwise incurred in maintaining these vacant facilities, thus freeing up funds for maintaining facilities actually being used by DOD organizations. In the March 2016 report, “Defense Infrastructure: More Accurate Data Would Allow DOD to Improve the Tracking, Management, and Security of Its Leased Facilities” (GAO–16–101), GAO found that DOD is continuing to lease commercial administrative space within 50 miles of installations identified for force structure reductions three years earlier.

Until 2011, GAO cited chronic underfunding of facilities sustainment as a reason for defense support infrastructure’s inclusion on the high-risk list. At that time, GAO concluded that DOD had increased sustainment investment sufficiently and accordingly removed sustainment from the high-risk list. However, since then, DOD has reported it is again underfunding sustainment, raising questions about the mission capability of some of its facilities since such underfunding can lead to facilities not being in good working order and to life, health, and safety concerns.

The committee believes it is critical that DOD make cost effective decisions about how to manage this large facilities portfolio including excess facilities by appropriately targeting sustainment funds and disposing of or effectively reusing excess facilities where possible. Moreover, nothing prevents DOD from disposing of some excess facilities using authorities it already has. Even in the absence of a Base Realignment and Closure (BRAC) round, DOD should effectively use all available and existing authorities to appropriately manage this facilities portfolio.

Accordingly, the committee directs the Assistant Secretary of Defense for Energy, Installations, and Environment to provide a report to the Committees on Armed Services of the Senate and the House of Representatives with the President’s fiscal year 2020 budget submission. The Secretary’s report should address, but not be limited to the following: (1) What progress, if any, the military departments have made since the 2013 planned end of the demolition program in disposing of excess facilities and by what means other than BRAC; (2) How the military services prioritize facilities for disposal and the Services’ plans for disposal other than through BRAC through the end of the current future years defense program; (3) How DOD and the military services target facilities maintenance funds to ensure the highest priority facilities are properly maintained over excess facilities; (4) DOD’s and the military services’ long term strategy for ensuring that excess property is disposed other than through BRAC and how facilities maintenance funds can be more effectively used; (5) What progress, if any, the military services have made in moving from leased space to excess owned space on installations and otherwise granting space to non-DOD tenants when such tenancy is consistent with the installation’s military mission.

The committee further directs the Assistant Secretary of Defense for Energy, Installations, and Environment to brief the congress-

sional defense committees on the findings of the report not later than January 30, 2019.

#### **Assessment of hybrid electric drive performance**

The committee notes the Navy's operational energy program includes the installation of a Hybrid Electric Drive (HED) propulsion system on the USS *Truxton*. The committee understands the Navy anticipates the USS *Truxton* installation of the HED should pay for itself in 6 to 13 years.

The committee is interested in how the Navy will test, evaluate, and measure the at-sea performance and effectiveness of the HED on USS *Truxton*. If the Navy intends to make an informed decision about whether to program future HED installations, the committee believes the Navy must ensure such decisions are based on rigorous analysis of quantitative data collected from the USS *Truxton*.

Accordingly, the committee directs the Secretary of the Navy to conduct a comprehensive test and evaluation assessment of the HED installation on the USS *Truxton*. The assessment may include a classified annex. The assessment shall include, but not be limited to: (1) The HED system use and related effects monitoring using the Navy Energy Usage System; (2) Daily operational reports (e.g., OPREP-5) related to HED and its performance; (3) A comparison of two DDG-51 class ships (HED and non-HED) while the ships are executing similar mission sets, both training cycle and deployment (preferably a DDG flight IIA within the same strike group or other task group); (4) Metrics that quantitatively evaluate and compare transit operations, training operations, presence operations, operational missions, enhanced mission effectiveness, reduced logistical burdens and mission risk, and increased capability and resilience; (5) An analysis of operating costs compared to ships in the same class without HED for the same time period; (6) Updated investment planned for HED in the future years defense program; and (7) Any other elements the Secretary deems appropriate.

The assessment shall be conducted with a report delivered to the Committees on Armed Services of the Senate and the House of Representatives and the Comptroller General of the United States no later than January 1, 2020. The report shall describe the findings of each of the seven prescribed assessment areas. Within 60 days after receiving the plan, the Comptroller General shall submit to the Committees on Armed Services of the Senate and House of Representatives an evaluation of the report and assessment.

#### **Battery storage and safety programs clarification**

The committee strongly supports the continuation of funding to the Department of Navy and the Office of Naval Research in the advancement of its battery storage and safety programs to support force protection and applied research. The committee notes that for the purposes of clarifying the term "battery storage and safety", the committee means those battery storage and safety technologies and advancements which provide energy resilience to the Department of Defense. The committee also notes that in section 101, title 10, United States Code, the term "energy resilience" means the ability to avoid, prepare for, minimize, adapt to, and recover from anticipated and unanticipated energy disruptions in order to ensure en-

ergy availability and reliability sufficient to provide for mission assurance and readiness, and other mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements.

#### **Battery storage technology**

The committee recognizes that battery storage technology is a vital component in micro-grid resiliency and energy security and independence. The committee seeks further information regarding the Department of Energy's advanced research and development efforts to isolate and protect domestic micro-grids from potential cyber-attacks through self-sustaining energy infrastructure. The Department of Energy has recognized the importance of shielding the nation's critical energy infrastructure from cyber-attacks. Emerging hybrid technologies are being used to develop micro-grids that can insulate targeted areas from cyber threats. The committee recognizes that integrating battery storage as an alternative for high-voltage transmission lines enhances the ability for Department of Defense facilities to access a consistent energy source and continue operations.

#### **Briefing on Agency for Toxic Substances and Disease Registry PFAS report**

The committee understands that the Department of Health and Human Services (HHS) Agency for Toxic Substances and Disease Registry (ATSDR) is in the process of completing toxicological profiles for perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA) and perfluorohexane sulfonic acid (PFHxS) in drinking water, pursuant to 42 U.S.C. § 9601 et seq. The contamination of the water supply resulting from the leeching of these chemicals used in the military's firefighting foam in ground water impacts the readiness of our troops and the health of our active duty and reserve service members and their families. In order to address the readiness issues associated with this contamination, the committee requests a briefing on this ATSDR report within thirty days.

#### **Building energy resilience on military installations**

The committee strongly supports recent efforts by the Army to increase its energy resilience with a 50 megawatt multi-fuel generation facility on Schofield Barracks. The committee notes the facility will be able to provide the Army the first right to power, a black start capability, and 100 percent of its operational requirements for Schofield Barracks, Wheeler Army Airfield and Field Station Kunia in the event of an intentional or unintentional power outage. Notably, the power plant will have a minimum five days of fuel on site and a 30 day fuel supply available on the island of Oahu. Not only do these kind of cooperative agreements provide the Army the ability to improve its installations without any capital investments of its own, they also provide a combat capability that improves readiness.

Due to its strategic location, the power facility remains above the tsunami strike zone which not only directly benefits the Army, but also will enhance the grid resilience and provide an energy security

benefit to the local community and medical services. Notably, it is the only current baseload power generation facility on the island of Oahu that is located above a tsunami strike zone. Another notable and successful Army example of building energy resilience on its military installations, is Fort Drum, home of the 10th Mountain Division, which now has the ability to power its installation for over a month off the grid in the event of an outage. The committee strongly encourages the Department of Defense to pursue similar cooperative agreements, particularly in locations that face high-costs of energy like Alaska and Hawaii.

The committee particularly encourages distributed energy projects that are strategically located in order to provide energy security and resilience to military installations. The use of non-Department or third party financing mechanisms, such as power purchase agreements and energy savings performance contracts, to pursue such large-scale energy resilience projects is strongly encouraged.

#### **Comptroller General review of Defense-wide Working Capital Fund overhead charges and fees**

The Defense-wide Working Capital Fund (DWWCF) is the working capital fund managed by the defense agencies, and consists of six activity groups. Three of these activity groups are operated by the Defense Logistics Agency (DLA), two by the Defense Information Systems Agency, and one by the Defense Finance and Accounting Service. These defense agencies use the DWWCF cash balance to cover costs for providing services and purchasing various commodities. The DWWCF is reimbursed through charges to customers, including overhead and other fees.

The Department of Defense (DOD) manages working capital funds, which were established to satisfy recurring DOD requirements using a businesslike buyer-and-seller approach. According to DOD's Financial Management Regulation, the goal of the DWWCF is to remain revenue-neutral, allowing the fund to break even over time. As of the end of fiscal year 2017, the DWWCF held a cash balance of about \$3.0 billion.

The committee is interested in understanding the activities funded through the DWWCF, how rate structures are determined, and options for achieving efficiencies.

Accordingly, the committee directs the Comptroller General of the United States to evaluate: (1) The activities the defense agencies fund through overhead charges and fees collected from customers, and how these activities differ from those funded through annual appropriations; (2) Methods used to determine the rate structure of overhead charges and fees; and (3) Options, if any, that DOD has considered to adjust its approach to managing overhead charges and fees to achieve greater efficiencies or reduce costs.

The committee further directs the Comptroller General of the United States to brief the Committee on Armed Services of the Senate not later than April 15, 2019, with a final report to follow.

#### **Congressional notification of incidents**

The committee is concerned that the Office of the Secretary of Defense and the military departments have not promptly and con-

sistently notified the committee of the occurrence of significant incidents and accidents. While certain military departments have routinely sent timely notifications to the committee, there has often been a lack of even basic information communicated when troubling events have occurred.

Accordingly, the committee directs the Department to establish a rigorous, well-defined process and system to provide notifications to the committee for basic and initial reporting of incidents such as, but not limited to: class A and B mishaps for aircraft, ships and submarines, training casualties and accidents, safety stand downs and operational pauses, relief of command, significant explosions and fires at installations, and significant security barrier breaches.

### **Corrosion prevention and oversight**

The committee established Office of Corrosion Policy and Oversight (CPO) in part to unify and strengthen Department of Defense (DOD) efforts to address corrosion and its impacts on our military weapon systems and infrastructure. Prior to CPO, DOD corrosion prevention and control efforts were ineffective, inefficient and lacked coordination across the military services. The critical role CPO serves in this regard is essential as DOD strives to restore full spectrum readiness and sustain its weapons and installations.

The committee strongly supports DOD's March 2018 assessment that reaffirms the value of CPO and strongly recommends that "the CPO office be retained in order to continue an impressive legacy of nearly 15 years of achieving significant cost savings and improvements in the availability of department-wide weapons systems, equipment and infrastructure, while enabling and partnering with the services and industry to continually improve corrosion reduction efforts."

The committee notes that DOD's report and recommendation make apparent that the authorities accorded CPO remain valid. For example, in the assessment, DOD cites that CPO has achieved a \$2.0 billion reduction in the annual cost of corrosion, increased the average availability of aircraft, ships and ground vehicles by 10 percent, decreased the overall percentage of corrosion-related maintenance by 4 percent, all while reducing duplication and bureaucracy throughout DOD.

The committee is nevertheless concerned that efforts to reorganize some DOD activities and considerations to restructure CPO put at risk the office's ability to sustain and build upon its impressive record of success. Were the status of the office to significantly erode, DOD would likely revert back to the fragmented and ineffective approach to corrosion reduction that prompted the creation of CPO in the first place.

Accordingly, the committee directs the Comptroller General of United States to conduct a thorough review of the restructured CPO and submit to the committees on Armed Services of the Senate and the House of Representatives a report no later than December 1, 2018 that evaluates the extent the restructure aligns with the original intent of section 2228, title 10, United States Code, to make certain that the restructured CPO has the ability to operate across Department-wide activities such as research and development, operation and maintenance, sustainment and acquisi-

tion for weapon systems and infrastructure, as well as to serve as an overarching facilitator and integrator across the various military departments. Additionally, the report will evaluate the extent to which the restructure will allow CPO to sustain and build upon its successes in cost reduction, increases in asset availability, and reduction in duplication of critical corrosion prevention and mitigation activities.

#### **Cost benefit analysis of alternative-fueled vehicles and infrastructure**

The committee notes that the Department of Defense (DOD) maintains an inventory of 177,000 owned and leased nontactical vehicles, including passenger, trucks and other vehicles, at a cost of \$874.0 million per year, and that increased use of alternative fueled vehicles (AFVs) would reduce petroleum consumption and costs. The committee also notes that AFVs by definition have a wide range of fuel sources from natural gas, hydrogen, coal, ethanol and electricity. Energy Savings Performance Contracts (ESPCs) are one mechanism to allow the purchase or lease of non-tactical AFVs and associated fueling and charging infrastructure. ESPCs are third-party financed contracts to achieve energy savings and benefits ancillary to that purpose, such as reduced operation and maintenance costs. While ESPC authority under 42 U.S.C. 8287 is currently limited to energy savings measures applied to federal buildings and facilities, the committee notes that such authority could also be applied to AFVs and associated infrastructure. Therefore, the committee directs the Director, Cost Assessment and Program Evaluation to conduct an independent cost-benefit analysis on the business case for entering into ESPC agreements to support the use of AFVs and the fueling or charging infrastructure necessary for alternative fueled vehicles, and to provide a briefing on the results of that analysis within 180 days after the date of enactment of this Act.

#### **Cost benefit analysis on conducting organic depot level maintenance on the joint surveillance target attack radar system**

The committee notes that the current depot maintenance program for the joint surveillance target attack radar system (JSTARS), currently conducted by a private contractor, has experienced significant delays in maintenance cycles. Contracted maintenance has also failed to meet the Air Force's requirement to have no more than three aircraft in depot to meet operational needs. The contractor averaged six aircraft in depot during calendar year 2017. The Air Force was unable to perform 179 sorties from November 2016 to October 2017, including 8,500 Ready Aircrew Program events, which reduced combat effectiveness. This diminished the Air Force's ability to meet combatant command (COCOM) mission requirements and Global Response Force taskings. In addition, the committee is concerned that the Air Force was unable to support seven sorties in support of COCOMs, and the Joint Staff denied requests for JSTARS support due to low aircraft availability. As a result of low aircraft availability forecast, the total Global Force

Management Allocation Plan offering was reduced for fiscal year 2018.

The committee believes that cost and maintenance efficiencies could be achieved by returning depot maintenance responsibilities to the Air Force organic industrial base. Therefore, the committee directs the Secretary of the Air Force to submit to the congressional defense committees a report that describes and assesses the costs and benefits to the Air Force of conducting depot-level maintenance on the JSTARS platform at an organic depot in comparison to a private contractor, no later than September 30, 2018.

### **Depot best practices**

The committee notes that the Government Accountability Office has issued several reports on challenges experienced at the organic maintenance depots, including challenges pertaining to deteriorating equipment and facility condition, filling critical personnel skills, meeting service repair needs, and excesses in carryover of workload. These problems can lead to delays in the maintenance of weapon systems that ultimately affect readiness by impeding the services' ability to conduct training and provide forces to perform missions around the world. Despite these challenges, it is not clear the extent to which the Department of Defense (DOD) is assessing and, to the extent possible, mitigating the risk of maintenance delays when identifying its depot workload requirements.

The committee further notes that while DOD has developed some initiatives that are intended to help improve its depot operations, such as the Navy's Shipyard Optimization Plan and the DOD Maintenance Executive Steering Committee, it is not clear if DOD is effectively sharing and implementing best practices and lessons learned identified by its individual depots. Therefore, section 346 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), directed the Secretary of Defense to submit to the congressional defense committees a "comprehensive plan for the sharing of best practices for depot-level maintenance among the military services." The committee received the Secretary's letter response pursuant to the requirement on March 26, 2018. The committee finds that while the response describes the existence of several groups, committees, and activities related to the "enterprise governance framework of joint collaboration," the response does not include a comprehensive plan for sharing of best practices for depot-level maintenance as required by section 346.

Accordingly, the committee directs the Comptroller General of the United States to submit a report or reports to the congressional defense committees, addressing: (1) To what extent are DOD and the services sharing and implementing best practices and lessons learned at individual depots with other depots; (2) To what extent have specific weapon systems repair activities gained benefits from implementation of such best practices or lessons learned; (3) To what extent have DOD and the services identified and quantified the key factors that influence whether depots complete their weapon system maintenance mission on time and shared these factors among themselves; (4) To what extent do DOD and the services make sure that depot workload requirements are generating required depot capability and capacity e.g., skilled personnel, suffi-

ciency in facilities and equipment, assured availability of supplies and materials or other relevant factors and, as appropriate, share best practices and lessons learned among themselves; (5) To what extent do DOD and the services identify risk to meeting anticipated depot workload timeframes, develop mitigation strategies to address that risk, and, as appropriate, share their risk management strategies among themselves.

The Comptroller General may also include other related matters as deemed appropriate in order to provide a comprehensive examination. The committee further directs the Comptroller General to provide a preliminary briefing to the congressional defense committees on the Comptroller General's evaluation not later than April 30, 2019, with a report or reports to follow.

### **Development of future fluorine-free fire fighting foams**

The committee is strongly supportive of the Department of Defense's (DOD) plans to develop future fluorine-free fire fighting foams (F6). Once again this year, the committee has increased funding for both the Strategic Environment Research and Development Program (SERDP) and the Environment Security Technology Certification Program (ESTCP), largely in part to develop, demonstrate, and validate a fluorine-free surfactant that still meets military specification (MILSPEC) F-24385 and mimics the fluorocarbon surfactant performance attributes of aqueous film forming foam (AF3).

While AF3 performs well against fires, highly fluorinated chemicals are highly persistent long after their use and have been associated with serious health problems, such as cancer, liver and thyroid disease, and immune system and development effects, particularly in the case of per- and polyfluoroalkyl substances (PFAS). The dangers of PFAS also prompted this committee to authorize DOD and the Centers for Disease Control and Prevention to conduct a nation-wide human health survey on the effects of PFAS in sources of drinking water.

The committee is encouraged by and supportive of DOD efforts to reduce the use of AF3 and substitute with a perfluorooctane sulfonate-free firefighting foam C6. However, even short-chain C6 may pose the same health risks as AF3 since it has been documented that C6 can pass through granulated activated charcoal water filters.

Accordingly, the committee strongly encourages DOD to use funding increases in SERDP and ESTCP to develop, demonstrate, validate and field F6. Notably, multiple countries, including NATO allies, use fluorine-free firefighting foam at airports, as well as the oil and gas industry. DOD has made encouraging progress to date, for example, the Naval Research Laboratory has full strength basic tested and continues to test samples of non-Fluorine foam that have been identified by industry, such as silicon and oxygen combinations. Lastly, the committee strongly encourages the Department of the Navy to amend MILSPEC F-24385 to no longer require fluorine in AF3 and F6, as appropriate.

### **Employment of Special Operations Forces**

The committee has great interest in actions by the Department of Defense to respond to the priorities identified in the National Defense Strategy (NDS) and how they impact the readiness and employment of Special Operations Forces (SOF). In particular, the committee notes the important role of SOF in supporting counterterrorism and counterinsurgency operations around the world. Almost 17 years since the terrorist attacks of September 11, 2001, SOF remain in high demand by Geographic Combatant Commanders and, as a result, continue to face high operational and personnel tempo. In response to the stress on the force, the committee notes that U.S. Special Operations Command is undertaking initiatives to bring SOF into compliance with Secretary of Defense directed deployment to dwell goals.

The committee notes that Department of Defense has a limited number of SOF personnel and believes that an appropriately trained and prepared SOF force of sufficient size must be ready and available for contingency operations that may involve a near-peer competitor as identified in the NDS. Therefore, the committee strongly urges the Department to review how it currently employs SOF in response to Geographic Combatant Commander requirements to ensure sufficient numbers of SOF are appropriately trained and ready to respond to contingencies across the spectrum of conflict, including with a near-peer competitor.

### **Encouraging the use of the Innovative Readiness Training program**

The committee is aware that readiness challenges continue to face the Armed Forces due to budgetary constraints. The committee continues to recognize the value of the Innovative Readiness Training (IRT) program, which allows the Armed Forces the most realistic, joint training opportunities for National Guard, Reserve, and Active Duty members.

The committee values the IRT program for its low cost and high benefit to achieving measurable military readiness. The committee strongly encourages the Department of Defense to increase utilization of IRT projects to provide mission-essential training, prioritizing programs that directly support the most challenging and relevant training opportunities and increasing program outreach toward identifying quality training opportunities in the most logistically challenging geographical areas. Examples of IRT activities include, but are not limited to, constructing rural roads and airplane runways, small building, and warehouse construction in remote areas, transportation of medical supplies, and military readiness training in the areas of engineering, health care, and transportation for under-served communities.

The committee understands the IRT program offers complex and challenging training opportunities for domestic and international crises. The committee is also aware that states that utilize the IRT program include Alaska, Arizona, Arkansas, California, Colorado, Hawaii, Indiana, Kentucky, Louisiana, Maine, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, South Dakota, Texas, Virginia, West Virginia, and Wyoming.

The committee strongly encourages the Department of Defense to continue to fully utilize IRT programs that provide hands-on and mission-essential training and that are available to active, reserve and National Guard forces.

**Establishment of the energy resilience project development and implementation office**

The committee is encouraged by the progress the Department of Defense has made to promote energy resilience, efficiency, and distributed energy across its military installations with limited resources and personnel to accomplish these priorities. However, the committee recognizes that vulnerabilities to energy supplied to military installations and operations place our national security at risk. Further, senior Department officials continue to express concern to the committee on the ability of the Department to keep pace with these threats and accelerate energy resilience project development due to resource constraints, the inability to retain and recruit qualified energy and technical professionals, and potential flexibility in existing authorities.

The committee strongly supports efforts by the military departments and defense agencies to increase its energy resilience with targeted and prioritized decisions to procure or upgrade infrastructure, distribution systems, equipment, fuel, and energy generation facilities. Further, the committee strongly supports the department's alternative financing pursuits and notes that it is uniquely positioned to develop energy resilience projects on its military installations to remediate risks from commercial electric and fuel grid disruptions. Not only do alternative financing agreements provide the department the ability to improve its installations without any capital investments of its own, they also provide a combat capability that improve the department's national security and readiness posture. The committee notes that these public and private sector partnerships are essential to advance the department's national security strategy, and that these partnerships should support integration of a defense workforce with science, technology, engineering, economic, and financial backgrounds to communicate with the private sector.

Accordingly, the committee directs the Secretary of Defense to work with the secretaries of the military departments, along with the defense agencies, to conduct an investigation for a central office to accelerate energy resilience project development and implementation. The Secretary should consider equitable representation from the military departments and defense agencies during the review, and consult with the services and defense agencies when providing a recommendation. The review should include, at a minimum, the following: (1) A review of lessons learned from existing service execution offices such as the Navy's Resilient Energy Program Office, the Army's Office of Energy Initiatives, and the Air Force's Office of Energy Assurance; (2) Personnel skills, manning, and resources needed to establish the office; (3) The appropriate organizational reporting structure of such an office; (4) Strategy, mission, and performance goals the office would pursue (to include the scope of projects considered and funding strategy considerations); (5) Recruitment, retention, and training strategy; and (6) Legislative au-

thorities and other recommendations to consider for the establishment of an office to accelerate energy resilience project development. Lastly, the Secretary shall brief the committee on the results of its review not later than March 1, 2019.

#### **Establishment of the occupational group for federal energy managers**

The committee is encouraged by the progress the Department of Defense has made to promote energy resilience, efficiency, and distributed energy across its military installations with limited resources and personnel to accomplish these priorities. However, the committee recognizes that vulnerabilities to energy supplied to military installations and operations place our national security at risk. Further, senior Department officials and personnel on military installations continue to express concern to the committee on the ability of the Department to keep pace with these threats due to the inability to retain and recruit qualified energy management professionals with the appropriate technical skills.

Accordingly, the committee directs the Secretary of Defense to work with the Office of Personnel Management to establish an occupational group for energy management in its Handbook of Occupational Groups to ensure legislative requirements for energy efficiency, distributed energy, and energy resilience are met. At a minimum, the energy management occupational group shall allow the Department to meet Title 10 energy requirements, and those energy requirements found in Department of Defense Directives and Instructions. The Occupational Group shall include grades from GS-1 to GS-15, or equivalent graded positions. Lastly, the Secretary shall brief the committee on its progress not later than March 1, 2019.

#### **Guidance on utility privatization contracts**

The committee supports the conveyance of utility systems to private entities and is aware of the increased energy resilience and reliability that has resulted at installations where this has occurred, but notes that restrictions on operation and maintenance funds have slowed progress on critical projects that are required to increase energy resilience and reliability. The committee is also aware of efforts undertaken by the Army to encourage Army commands to use available operation and maintenance funds for utility infrastructure improvements associated with privatized utility systems, and encourages the Department of Defense and the other services to provide similar guidance to clarify and better leverage operation and maintenance funds for utility improvements with utilities privatization contracts to meet energy resilience and installation readiness requirements.

#### **High purity aluminum**

The committee recognizes the importance of high purity aluminum (HPA) to meet national security requirements of manufacturing and weapon system performance. HPA plays a critical role in defense platforms such as in the bulkheads for the F-35 and the advanced armor for the Joint Light Tactical Vehicle. HPA is also used to make alloys that are used in other defense and space plat-

forms. The demand for HPA is expected to continue to increase as the Department of Defense ramps up production on key next generation air and ground platforms and the need for weight reduction remains a key requirement. The committee understands that the United States currently has only two domestic producers of HPA and relies on imports from Russia, the Middle East, and elsewhere to meet demand.

Accordingly, the committee encourages the Secretary of Defense to take affirmative steps to maintain secure sources of supply for HPA and to consider investing in appropriate improvements to make the production of domestic HPA more efficient and available than through the traditional smelting process.

#### **High-energy intensity report**

The committee notes that the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) required the then-Under Secretary of Defense for Acquisition, Technology, and Logistics, in consultation with the assistant secretaries responsible for energy, installations, and environment of the military services, to submit a report on efforts to achieve cost savings at military installations with high levels of energy intensity. The committee notes that this report is now over six months overdue. The committee continues to believe that energy costs in areas of high-energy intensity is a critical issue that should be addressed. Accordingly, the committee encourages the Under Secretary of Acquisition and Sustainment to promptly complete the report and submit it to the congressional defense committees.

#### **High-pressure cold spray repair**

The committee is aware that the Department of Defense is using high-pressure cold spray repair, a solid-state metal additive manufacturing technology that is capable of reapplying metal to highly worn or corroded metal surfaces without damaging the base metal. The committee understands this technology would restore the strength and serviceability of parts that previously would require replacement. The committee notes this technology could enable more cost-effective and timely maintenance and has been used by the Department of the Navy to achieve cost savings for the repair of critical components. Therefore, the committee encourages the Secretary of the Navy to expand the use of this technology for the development of new repair processes for additional Navy components.

#### **Leveraging non-Department funds to address infrastructure maintenance backlogs and project delays**

The committee is strongly encouraged by the Department of Defense (DOD) and its efforts to improve energy resilience and security infrastructure on its installations. For example, DOD has turned to the use of energy savings performance contracts (ESPCs) as one means to leverage private sector financing and investments which are paid back over time by DOD through measured and verified energy-related savings. The committee strongly encourages DOD to incorporate energy resilience and security measures into

its projects and contracts pursued through non-Department funding.

The committee also recognizes that DOD has historically prioritized resources for its operations and weapons modernization over its facilities sustainment restoration and modernization (FSRM) accounts, which has resulted in a significant infrastructure maintenance backlog, including older and deteriorating facilities, which in turn degrades readiness and quality of life for warfighters.

In order to reduce the deferred maintenance backlog, increase the magnitude of capital improvements, costs savings, and cost avoidance for DOD, the committee strongly encourages the Department and its military installations to leverage its FSRM accounts, in combination with third-party and non-Department funding sources and financed energy savings projects, to maximize energy infrastructure investments through mechanisms like ESPCs and utility energy service contracts (UESC). As such, FSRM funds should be used for one-time payments upon the award of new ESPC and UESC projects and as partial payments for recurring operation and maintenance activities.

Additionally, the committee remains concerned that DOD has failed to streamline delays encountered during the ESPC, UESC, and power purchase agreement processes, which could otherwise assist in decreasing the infrastructure maintenance backlog and increase installation resilience that is critical to mission assurance.

Accordingly, the committee directs the Secretary of Defense to establish a policy to better leverage non-Department funding to address its infrastructure maintenance backlog and energy resilience requirements, including setting a Department performance contracting goal along with a tracking system to identify and address project phase bottlenecks, with a timeline goal of 18 months from notice of opportunity to notice of intent to award. The Secretary shall brief the committee on its progress no later than March 1, 2019.

#### **Light emitting diodes for aviation applications**

The committee is aware of ongoing efforts by the Services and the Defense Logistics Agency to increase the utilization of light emitting diodes (LED) for aviation applications, both through retrofitting existing aircraft and requiring LEDs for exterior and interior use on new designs. In addition to their long life, high reliability, and reduced energy consumption, LEDs reduce glare and interference with night vision equipment. Most commercial airplanes use LEDs for navigation, position, beacon, anti-collision, cabin, and cargo lighting. Accordingly, the committee encourages the services to retrofit LEDs onto existing aircraft when they undergo modification and maintenance. The committee also encourages the services to establish LED requirements for ongoing aviation development and acquisitions, such as the Long Range Strike Bomber and unmanned aerial vehicles.

#### **M240 medium machine gun modernization**

The committee is concerned the Army may be assuming too much risk in the small arms industrial base with respect to the

family of M240 medium machine guns. Current funding profiles could lead to a potential production line shutdown. The shutdown of existing production lines could create significant operational impacts if requirements change. The committee notes that the budget request included \$2.1 million for M240 production; however, no funding is projected for new production in fiscal year 2020 or fiscal year 2021.

The committee encourages the Army to closely monitor this critical industrial base and work with the original equipment manufacturer to develop courses of action to ensure the production line remains viable and capable of supporting potential increased requirements. The committee directs the Secretary of the Army to provide a briefing to the committee by September 28, 2018. This briefing shall include, at a minimum: (1) The projected service life of the current M240 inventory; (2) The Army's plan and schedule to replace the current M240 inventory either with newer M240 models or an entirely new system; (3) How the Army will address increased requirements caused by growth in end strength and combat formations; (4) Relevant cost analysis for restarting the M240 production line after a period of dormancy; and (5) A description of the capacity challenges and minimum sustaining production rates with regard to the original equipment manufacturer.

Additionally, the committee directs the Secretary of the Army to provide a study to the committee by October 1, 2018, on the feasibility of transitioning the existing fleet of M240B medium machine guns to the lighter-weight M240L configuration. This assessment shall take into consideration the estimated costs associated with this transition to include the transition of current inventories of M240Bs to the M240L variant.

#### **Maintaining current balance of government and private contractors under 10 U.S.C. 2466**

The committee continues to recognize the importance of section 2466, title 10, United States Code, in its sustainment of our military readiness. The committee continues to view core depot level workload as synonymous with organic workload, and core workload should be accomplished by government employees in facilities owned and operated by the United States. While the committee supports privatization of functions that are not inherently governmental in nature, including some depot maintenance of above core systems, the committee does not support the wholesale privatization of those functions necessary to ensure readiness and to defend the United States and our allies during periods of armed conflict. Depot maintenance is inherently governmental when conducted on mission essential weapons systems used in combat, combat support, combat service support, and combat readiness training.

Congressional support of privatization initiatives is based on the achievement of cost savings to the government as a result of a competitive marketplace.

The committee continues to see that competition, rather than privatization, may achieve the greatest degree of potential savings. To preserve our military readiness, the Department of Defense should sustain the organic capability and capacity to maintain and repair mission-essential equipment associated with combat, including new

weapons systems to the greatest extent possible. Finally, to ensure efficient use of organic maintenance and repair capacity, as well as the best value to the taxpayer, we believe the Department of Defense must continue to effectively utilize its logistics facilities.

### **Marine Corps Base of the Future**

As noted by the Marine Corps, the January 2017 tornado resulted in “extensive damage requiring significant repair and construction” at Marine Corps Logistics Base Albany. That challenge prompted an opportunity to identify inadequate command and control, a misaligned workforce, excess infrastructure, and the desire to have an island capability for energy resilience.

In light of the continued deferment of facilities sustainment restoration and modernization funding by the Department, the committee is strongly supportive of the recent efforts by the Marine Corps to hold its inaugural Base of the Future Symposium, which sought collaboration from local communities, private industry, government officials and academia in order to improve installation design and services that are responsive, resilient, and improve process. The committee continues to support the concepts of increasing operational effectiveness, readiness, quality of life, safety and efficiency on installations while pursuing techniques and technologies that leverage data analytics, automation, robotics, and the internet of things.

### **Marine Corps Policy on flame-resistant uniforms**

The committee notes the Marine Corps issues the Enhanced Flame Resistant Combat Ensemble (EFRCE) to deploying Marines and Sailors. The EFRCE is the latest upgrade to the Marine Corps’ Flame-Resistant Combat Ensemble inventory, updating a long-sleeve shirt and trousers with a more durable and better performing flame resistant material that allows the uniform to self-extinguish reducing the incidence and severity of burn injuries.

The committee commends the Marine Corps’ efforts to develop and field high performance flame resistant clothing to deploying Marines. However, the committee is concerned the EFRCE is only issued to select deploying marines and sailors. The committee believes the same high performance and flame-resistant protection capabilities provided by the EFRCE in combat operations could also be applied for domestic training and field exercises in the United States, if deemed operationally relevant.

Accordingly, the committee directs the Secretary of the Navy to provide a briefing to the committee by March 1, 2019, on steps being taken to evaluate the EFRCE and other flame resistant combat uniforms, items to include: (1) A market survey of materials that could be used in a Flame Resistant (FR) Marine Corps Combat Utility Uniform (MCCUU) uniform; (2) A cost benefit analysis of issuing EFRCE or a FR MCCUU at initial entry rather than issuing MCCU at initial entry; (3) The near-term policy for authorizing use in appropriate field exercises and training scenarios at unit commander’s discretion; and (4) The advisability and feasibility of implementing a long-term fielding plan for incorporating the EFRCE and/or other flame resistant combat uniforms as organizational equipment in appropriate units.

**Military working dogs**

As reflected in the findings of the Department of Defense Inspector General (DODIG) report 2018–81, the committee remains concerned that a lack of guidance remains, particularly for nontraditional military working dog (MWD) programs that are not directly supported by the 341st Training Squadron, 37th Training Wing, at Lackland Air Force Base in Texas. Accordingly, the committee directs the Secretary of the Air Force, in collaboration with the secretaries of the other military departments with MWD assets to fully implement the recommendations from DODIG report 2018–81.

The committee further directs the Secretary of the Air Force, in collaboration with the secretaries of the other military departments with MWD assets, to submit a report not later than 180 days after the enactment of this Act, that examines the status of all MWDs since 2013 and addresses at a minimum, the following: (1) The number of MWDs transferred from overseas to the United States for retirement; (2) The number of MWDs overseas that did not transfer to the United States and their ultimate disposition or destination; (3) The number of MWDs transferred to law enforcement agencies; (4) The number of MWDs dogs that were transferred to one of their handlers; (5) A description of the actions taken by the military to notify current or previous handlers of the opportunity to adopt their MWD; (6) A description of the oversight of the adoption process to ensure that MWDs are placed in appropriate settings; and (7) Examine options and potential costs of assisting those handlers who adopt MWDs with veterinary care for the MWD retirees.

The committee urges the services to have Contractor Working Dog (CWD) assets operate under the same regulations as MWDs and recommends the services ensure such requirements are provided for all future CWD programs.

**Navy next generation small arms weapons training and readiness requirements**

The committee is concerned that after 5 years, the Navy has not yet developed a next generation, comprehensive strategy to address the significant small arms training shortfalls identified in the 2013 Washington Navy Yard shooting report and subsequent shooting incidences.

As noted in prior National Defense Authorization Acts, the committee understands that the Navy Expeditionary Combat Command (NECC) and the Navy Strategic Systems Program (SSP) have successfully demonstrated an innovative synthetic small arms training approach capable of providing consistent, metrics-based proof of live-fire transfer across various skill levels for individual and crew-served training, while reducing ammunition and training time costs. NECC and SSP's advanced human performance, cognitive, and metrics driven training approach enforces improvements in reaction time, precision under stress, and decision-making skills to aid long-standing Navy challenges in meeting hostile intent determination and escalation of force decisions. Despite the success of these programs, and their alignment with a Department of Defense-wide move toward advanced training approaches that leverage human performance techniques and data collection as key

program requirements, the committee is concerned that other Navy commands continue to rely on legacy simulation systems that are not required to prove their effectiveness, and have not given serious consideration to new, innovative metric-based synthetic training programs capable of achieving, and validating Navy security force and fleet-wide small arms tactical and crew-served readiness improvements.

Accordingly, the committee directs the Secretary of the Navy to provide the committee with a briefing by February 1, 2019 detailing the Navy's comprehensive plan to meet the enhanced small arms training advancements discussed above. The briefing shall include, but not be limited to, how the Navy will: (1) Address afloat and ashore security forces and Navy Installation Command small arms training improvements outlined in the 2013 Washington Navy Yard report; (2) Meet the unique requirements for small arms and improved crew-served weapons training and effectiveness under U.S. Fleet Forces Command, and the Navy Criminal Investigative Service; (3) Meet the key training objectives for hostile intent determination and escalation of force requirements described above; (4) Validate that human performance, readiness metrics, and proof of live-fire transfer will be key capability requirements of the Navy's plan; and (5) Develop an acquisition strategy that requires legacy and future small arms simulation systems to competitively demonstrate their ability to meet rigorous next generation readiness requirements outlined above as a pre-requisite to receiving new or continued funding in fiscal year 2019 and future years.

#### **Operational energy technologies**

The committee is aware of a variety of technologies that may improve operational flexibility, enhance logistics, and reduce supply lines for forces operating in deployed environments, to include the ability to convert natural gas to tactical fuels, improve power generation, distribution, and storage in deployed environments, and increase the range and capability of tactical vehicles. The committee is supportive of these efforts and encourages the Department of Defense to transition such natural gas to tactical fuel technologies from the research and development stage in support of operational requirements. Therefore, the committee directs the Secretary of Defense to provide a briefing to the Senate Armed Services Committee, not later than March 1, 2019, that outlines steps the Department is taking, to include resourcing and timelines for maturation of operational energy technologies, to transition such technologies to full scale demonstrations and commercial production.

#### **Paint training programs**

The committee believes that maximum efficiency is critical for more than 350 military paint facilities that perform painting and coating operations, including corrosion prevention and control, radar absorption, and camouflage. The committee understands that the Department of Defense's operations require stringent specifications for the coating of each piece of equipment.

The committee understands that paint training programs provide training for military painters and coating operations. The committee notes that paint training programs can save the Department

time and funding resources by using advanced technology and equipment along with hands-on training to effectively apply coatings and reduce waste. Additionally, increasing coating transfer efficiency and preventing corrosion and rework can improve asset readiness. Furthermore, the committee understands that paint training programs consistently update to the latest advancements in coatings, application equipment, and technology. Lastly, the committee notes that the paint training programs have trained hundreds of military and contract painters, serving all of the military departments.

#### **Predicting soil-terrain-atmospheric conditions**

The committee is aware of the valuable support the U.S. Army Engineer Research and Development Center-Cold Regions Research and Engineering Laboratory provides in rapidly and accurately predicting key terrestrial properties (e.g. soil/dust, water, snow, vegetation) in forward operating areas and extreme environments. Given the broad spectrum and diversity of these conditions, the committee strongly recommends that the Army accelerate its collection of this data to support the full spectrum of military activities including terrestrial aircraft operations and identifying improvised landing zones, ground mobility, dust emission, and monitoring the availability of vital water resources. The committee also strongly encourages developing new methods of linking variable and frequently changing land surface-atmospheric conditions on the deployment and performance of vital sensor-based tactical systems.

In order to enhance the ability to rapidly and accurately predict the full spectrum of these terrestrial properties, the committee strongly urges the expanded use of remotely collected data, which directly benefits military operations, especially for adaptive and expedient force protection and maneuvers across highly variable terrain in all military operating environments and under variable climate and weather conditions.

#### **Privatization of stormwater conveyance systems**

The committee remains concerned with the ability of the Department of Defense's (DOD) infrastructure to handle stormwater at many of its installations. Additionally, the committee is discouraged with DOD's failure to comply with section 2813 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328), which stated that it was the sense of Congress that "wastewater" captures stormwater within the definition of section 2688(i) of title 10, United States Code. Not utilizing privatization to repair aging infrastructure at Fort Benning, for example, resulted in \$3.5 million dollars' worth of damage due to catastrophic failures suffered during a December 2015 storm. The committee directs the Department of Defense to provide a report no later than December 1, 2018, on installation storm water conveyance systems and plans on addressing any shortcomings that currently exist.

#### **Report on transportation infrastructure critical to Eastern Range space operations**

The committee notes that the Indian River Bridge in Florida is critical to the ability of the Department of Defense to provide space

launch and range operations in support of the nation's objectives. The Indian River Bridge is a federally owned property used by two federal agencies, and the replacement of the bridge requires a joint solution to ensure that the bridge is able to support national security space payloads. The committee also notes that the Secretary of the Air Force, who carries out the preponderance of space activities within the Department, must be included in the development of any solution with respect to the Indian River Bridge to ensure that space launch operations are not affected by the replacement of such bridge.

Accordingly, the committee directs the Secretary of the Air Force, in consultation with the Administrator of the National Aeronautics and Space Administration, to submit to the congressional defense committees no later than October 1, 2018, a report on the transportation infrastructure that is critical to the ability of the Department to use the Eastern Range in Cape Canaveral, Florida, for space launch operations. The report shall include: (1) An identification of Department and non-Department transportation infrastructure supporting the Eastern Range that is critical to Department space operations, including payload processing, delivery, and Department-operated launch capabilities; (2) An assessment of the ability of such transportation infrastructure or alternatives to safely transport all Department mission payloads during the period beginning on the first day of fiscal year 2019 and ending on the last day of fiscal year 2030; (3) An analysis of the impact on Department space launch operations of an inability of such transportation infrastructure to safely transport mission payloads through fiscal year 2030; and (4) A detailed plan to ensure that payload processing, delivery, and Department-operated launch capabilities are unencumbered by a failure in such transportation infrastructure.

The report may contain a classified annex, if deemed appropriate.

#### **Report on universal camouflage inventory and use**

The committee supports the Army's transition from Universal Camouflage Pattern (UCP) to Operational Camouflage Pattern (OCP) for soldier combat uniforms and organizational clothing and individual equipment (OCIE). The committee is very supportive of the Air Force's recent decision to replace the Airman Battle Uniform and adopt OCP for all of its combat uniforms. The committee is also aware of a significant current inventory of OCIE in UCP, which includes, but is not limited to, Modular Lightweight Load Carrying Equipment and Improved Outer Tactical Vests.

The committee understands that the Army Program Manager for Soldier Protection and Individual Equipment (PM SPIE) is currently evaluating overdyed technologies and processes. This evaluation could validate technology and processes for UCP printed products to be altered into a color palette that blends with the new down selected camouflage prints and continues to pass all necessary requirements. The committee believes that these overdyed technologies and processes could save significant resources, possibly up to 70 percent of the current item price, as the Army transitions to OCP.

Accordingly, the committee directs the Secretary of the Army to provide a report to the congressional defense committees no later than August 31, 2018. The report shall include, but is not limited to, defining current efforts underway to repurpose and field UCP clothing and equipment, efforts underway within PM SPIE to evaluate overdyed technologies and processes, and a plan with cost and timelines to field these technologies and processes towards addressing an economically viable drawdown and use of otherwise obsolete OCIE in UCP.

### **Review of Department of Defense mission assurance program**

The committee continues to be supportive of the Department of Defense's (DOD) issued mission assurance policy and strategy. However, the committee is concerned there may not be a robust mission assurance framework to fully consider mission, installation, facility, and infrastructure requirements (e.g. utility, water and wastewater, communication, and transportation systems), when developing critical mission assurance requirements.

The committee is also concerned that information and data sharing challenges persist among installation, facility, infrastructure, and mission personnel on military installations. The committee believes that a more robust and comprehensive mission assurance framework needs to be considered, and that a process to share mission assurance information and data could help inform the development of critical mission requirements that support budgetary decisions.

Prior Government Accountability Office (GAO) reports have identified similar challenges with DOD's identification and prioritization of defense critical infrastructure efforts. In 2008, the GAO identified several management weaknesses in DOD's implementation of the Defense Critical Infrastructure Program (DCIP) to comprehensively account for critical mission requirements (GAO-08-373R, GAO-08-851, and GAO-09-42). For example, the GAO reported that DOD lacks sufficient information to determine the full extent of the risks and vulnerabilities to critical assets. The GAO also identified the lack of infrastructure-related information regarding the networks, assets, points of service, and inter- and intra-dependencies; and, that existing programs did not routinely coordinate or share details of critical mission requirements with complementary DOD mission assurance programs.

Accordingly, the committee directs the Comptroller General of the United States to evaluate DOD's Mission Assurance program. The GAO review should assess the extent to which: (1) DOD fully takes into consideration supporting installation, mission operator, and critical supporting infrastructure (such as utility, water and wastewater, communication, and transportation systems) when developing critical mission assurance requirements; (2) The data management systems, such as the strategic mission assurance data system and mission assurance risk management system, accurately collect and take into account infrastructure-related information regarding the networks, assets, points of service, and inter- and intra-dependencies; (3) Metrics are in place to measure performance of achieving critical mission assurance requirements; (4) Proc-

esses are established to share information and data to inform development of critical mission requirements and budgetary decisions, and the extent to which these processes affected budgetary decisions; and (5) The military services have complied with existing DOD mission assurance requirements and policies.

The committee further directs the Comptroller General of the United States to brief the Committees on Armed Services of the Senate and the House of Representatives not later than March 28, 2019, on preliminary findings of the Comptroller General's evaluation with a report to be completed by July 30, 2019. A classified annex may be provided, as appropriate.

### **Review of the Navy's shipyard improvement plan**

The committee notes that the Navy's four public shipyards are critical to maintaining fleet readiness and supporting ongoing operations involving the Navy's nuclear-powered aircraft carriers and submarines. However, as the Comptroller General reported in 2017, the condition of the Navy's shipyards is poor and they have not been fully meeting the Navy's operational needs. Previous efforts to address these issues have been inadequate, in part because the Navy lacked results-oriented elements. Notably, the Navy presented its Shipyard Optimization Plan in February 2018, which the Navy describes as the first phase of a larger effort. The committee believes the Navy's assessment of public shipyard dry dock capacity is particularly important, as it identifies 67 of 68 deferred maintenance availabilities under the status quo, all of which would be restored upon making the public shipyard dry dock investment recommended by the report.

The committee is encouraged by the Navy's efforts to develop a long-term and comprehensive plan, yet the committee is also concerned about the extent to which the Navy's plan incorporates the recommended elements for effectively managing its shipyard capital investments and fully identifies the funding and authorities needed to eliminate maintenance backlogs.

Accordingly, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees regarding the Navy's effort to address its public shipyard shortfalls. The report should evaluate the extent to which the Navy's plan: (1) Addresses infrastructure deficiencies needed to support the current and 30-year force structure projections, includes metrics and other results-oriented elements to guide shipyard capital investments and sustain progress in addressing the shipyards' needs; (2) Includes a five-year workload management plan for the entire nuclear maintenance enterprise, both public and private-sector capacities, that limits lost operational days; (3) Identifies the funding and authorities required to eliminate maintenance backlogs and return to predictable, sustainable, and affordable ship maintenance availabilities for the planned navy force structure; and (4) Any other related matters the Comptroller General considers appropriate.

The committee further directs the Comptroller General to brief the Senate Committee on Armed Services not later than March 15, 2019, on preliminary findings of the Comptroller General's evalua-

tion, with the report to follow at a date to be determined at the time of the briefing.

### **Rough terrain container handler**

The committee notes the wide-ranging efforts of the military logistics community to provide vital resources for the warfighter. However, the committee remains concerned by the lack of a comprehensive and appropriately resourced sustainment strategy for RT240 Rough Terrain Container Handler (RTCH) despite the Department of Defense (DOD)'s inventory of over 1,100 RTCHs on hand and the hundreds of thousands ISO containers within the DOD's purview.

The committee is concerned by the age of the RTCH fleet, the rumored overall poor readiness of the systems on hand, and notes that there is not a recapitalization program for these systems, nor a long-term strategy to modernize a fleet that was procured in 1998. The committee believes the Army's lack of a RTCH Service Life Extension Program (SLEP) will lead to further reduced readiness and an eventual budget request to replace the RTCH with new equipment.

Of special concern is the differing paths the Army has taken compared to the Marine Corps, which has initiated a RTCH SLEP beginning in fiscal year 2019. The Marine Corps has requested \$8.1 million beginning in 2019 to begin a multi-year program to execute a SLEP for 117 of their 160 vehicles. The Army has chosen not to follow this model for its almost 1000 vehicles and is instead using an internal Operation and Maintenance, Army fund to perform its own program to sustain the fleet. As the Marine Corps is specifically investing in modern technology to harvest new capabilities and working with industry to speed the process of repairing their war weary systems, there is a clear divergence in the two programs.

Accordingly, the committee directs the Secretary of Army to develop plans to sustain the RTCH fleet, preserve the RTCH industrial base, both within and outside the Army, improve readiness and guarantee RTCH availability for operations into the 2030s. It requests a briefing to the Committee on those plans, and how current RTCH readiness meet U.S. Transportation Command (TRANSCOM) logistics requirements, within 60 days of bill passage.

In addition, since the Army and Marine Corps are pursuing different strategies to sustain this critical operational capability, the committee is interested in the potential impact of the two strategies on sustainment of this \$1.0 billion investment made by DOD over the past two decades. Therefore, the committee directs the Comptroller General of the United States to: (1) Review the readiness and condition of the RTCH fleets in the Army and Marine Corps; (2) Identify, analyze, and compare the Army's and Marine Corps' sustainment strategies for their respective RTCH fleets, including whether these approaches have assessed available modernization capabilities that would enhance joint deployability; (3) Describe and assess any strategic risks associated with the Army's and Marine Corps' approaches to modernizing their respective RTCH fleets to meet TRANSCOM logistics requirements; and (4)

Report on any other related matters the Comptroller General deems appropriate.

The committee directs the Comptroller General to brief the Senate Committee on Armed Services not later than April 1, 2019, on preliminary observations of the Comptroller General's evaluation, with a report to follow at a date to be determined at the time of the briefing.

**Surface Deployment and Distribution Command common and logistics broker waiver process**

The committee requests that the Secretary of the Army explore a waiver process within the Army Surface Deployment and Distribution Command (SDDC) for Department of Defense transportation officers who utilize the Automated Transportation Request System. This process may include allowing a SDDC registered transportation service provider freight carrier to serve as a common and logistics company or freight broker in such instances when it is determined by the transportation officer that cost and performance are better served by such action.

The committee urges this review in order to ensure that transportation officers are able to utilize those freight carriers best suited to serve the warfighter in terms of performance and cost.

**Use of fire extinguishers in Department of Defense facilities and National Model Codes**

The committee is aware that portable fire extinguishers are essential to the safety of members of the Armed Forces and their families. The protection of service members and their families is imperative to the readiness of the force. Every Department building should apply building and fire codes that are in line with national model codes and state building and fire codes. The committee notes that National model codes promulgated by the National Fire Protection Association and the International Code Council have been adopted by almost every state in the nation. The committee is concerned that the removal of these devices and subsequent adherence to the change in United Facilities Criteria has the potential to harm force readiness and protection service wide.

The current United Facilities Criteria should be updated to ensure it provides members of the Armed Forces, their families and other Department of Defense personnel with fire protection standards that are met by their civilian counterparts, including requiring portable fire extinguishers on military installations.

**Use of Global Combat Support System-Army by deployed units**

The committee notes that the Global Combat Support System-Army (GCSS-Army) is a defense business system that is being acquired to replace several separate systems used to manage critical logistics support activities at Army units, such as ordering and tracking supplies, maintaining accountability of organizational equipment, and monitoring unit maintenance. The committee understands that units will use GCSS-Army not only when they are at their home station, but also when they are deployed. In September 2014, the Comptroller General released "DOD Business

Systems Modernization” (GAO-14-470), which reviewed the early implementation of GCSS-Army at selected units and found that it was generally meeting their logistics requirements. At that time, the full system capability had been fielded to very few units, and the units were not deployed when using the system. The committee continues to be interested in the Army’s progress and plans for using GCSS-Army to support military operations.

### **Water resources for Department of Defense installations**

According to the Department of Defense (DOD), near term weather variability such as changes in the number of consecutive days of high or low precipitation as well as increases in the extent and duration of droughts may exacerbate water shortages. DOD has stated that potential effects of water shortages on the Department’s installations include the following: disruption to—and competition for—reliable fresh water supplies; and reduced—or changed—availability and access to water resources to support personnel.

Moreover, increasing demand for water places stress on the finite supplies of water that DOD installations depend on to fulfill their missions and make the management of water resources in the future more challenging if there is competition for fresh water. Drought conditions can impact military training when live fire training must be curtailed to avoid inadvertently starting wildfires. Water scarcity—the increased potential for the reduction in or disruption of an installation’s reliable access to water—has already caused DOD installations in the United States to implement aggressive water conservation and reuse measures. DOD has conducted studies that indicate critical installations could run out of water within two decades.

Accordingly, the committee directs the Comptroller General to conduct a review of the Department’s water resource management practices and the identified or potential impacts from water scarcity and brief the committee no later than January 30, 2019. At a minimum, the review shall answer: (1) How do selected DOD missions and installations rely on water and what are the potential impacts of water scarcity on DOD installations and mission capability; (2) To what extent have DOD installations experienced increasing water scarcity or drought conditions since 2014 and how has DOD mitigated any such impacts; (3) What challenges does DOD face, if any, in mitigating the impacts of water scarcity; and (4) To what extent does DOD ensure that installations take full advantage of all available sources of fresh water and what impediments if any exist that hamper the ability to access fresh water.

## TITLE IV—MILITARY PERSONNEL AUTHORIZATIONS

### Subtitle A—Active Forces

#### End strengths for active forces (sec. 401)

The committee recommends a provision that would authorize Active-Duty end strengths for fiscal year 2019, as shown below:

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Army .....	483,500	487,500	485,741	- 1,759	+2,241
Navy .....	327,900	335,400	331,900	- 3,500	+4,000
Marine Corps .....	186,000	186,100	186,100	0	+100
Air Force .....	325,100	329,100	325,720	- 3,380	+620
DOD Total .....	1,322,500	1,338,100	1,329,461	- 8,639	+6,691

The committee notes that the national unemployment rate is at a 10-year low point. In the past, when national unemployment was low and the military sought large end strength increases, the all-volunteer force has struggled to recruit and retain sufficient numbers of high-quality servicemembers. Therefore, the committee recommends end strength increases aligned with historical growth and tied to specific missions.

The committee encourages the Army to use the additional end strength provided by this section to support priorities identified in the National Defense Strategy, such as Short Range Air Defense Battalions, Indirect Fire Protection Capabilities, Multiple Launch Rocket System Battalions, Air Defense Artillery Brigade Headquarters, Corps Headquarters in Europe, and the requisite trainees, transients, holdees, and students.

For the Navy, the provision would authorize one of the largest year-to-year end strength increase since the end of the Cold War. While the committee recognizes the need for a larger end strength to meet future fleet demands, the Navy is unaccustomed to rapid growth and must demonstrate its ability to responsibly meet end strength targets.

For the Marine Corps, modest growth supports emerging demands for special operations forces enabler personnel and is in line with historical end strength increases.

For the Air Force, the provision would authorize end strength growth in line with historic achievable levels to increase pilot and enlisted aircrew production.

The committee notes that current law authorizes the Secretary of Defense to approve up to a 3 percent Active-Duty end strength variance from the levels authorized by Congress. The committee

encourages the Department of Defense to make use of this authority if the military services demonstrate the ability to responsibly grow beyond authorized levels.

**End strengths for commissioned officers on active duty in certain grades (sec. 402)**

The committee recommends a provision that would authorize Active-Duty end strengths for officers in grades of major, lieutenant colonel, and colonel, and Navy grades of lieutenant commander, commander, and captain as of September 30, 2019, as follows:

Service	Major/Lieutenant Commander	Lieutenant Colonel/Commander	Colonel/Captain
Army .....	15,470	8,700	3,970
Navy .....	11,010	6,670	3,060
Marine Corps .....	3,920	1,910	650
Air Force .....	13,920	10,270	3,450
DOD Total .....	44,320	27,550	11,130

The end strength authorizations contained in this provision are aligned with the projections included in the fiscal year 2018 Defense Manpower Requirements Report. The committee notes that the fiscal year 2019 Defense Manpower Requirements Report was not submitted by the legally specified due date and was therefore not considered for the purposes of this provision.

**Subtitle B—Reserve Forces**

**End strengths for Selected Reserve (sec. 411)**

The committee recommends a provision that would authorize Selected Reserve end strengths for fiscal year 2019, as shown below:

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Army National Guard .....	343,500	343,500	343,500	0	0
Army Reserve .....	199,500	199,500	199,500	0	0
Navy Reserve .....	59,000	59,100	59,000	-100	0
Marine Corps Reserve .....	38,500	38,500	38,500	0	0
Air National Guard .....	106,600	107,100	106,600	-500	0
Air Force Reserve .....	69,800	70,000	69,800	-200	0
DOD Total .....	816,900	817,700	816,900	0	0
Coast Guard Reserve .....	7,000	7,000	7,000	0	0

**End strengths for Reserves on active duty in support of the reserves (sec. 412)**

The committee recommends a provision that would authorize full-time support end strengths for fiscal year 2019, as shown below:

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Army National Guard .....	30,155	30,595	30,155	-440	0
Army Reserve .....	16,261	16,386	16,261	-125	0
Navy Reserve .....	10,101	10,110	10,101	-9	0

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Marine Corps Reserve .....	2,261	2,261	2,261	0	0
Air National Guard .....	16,260	19,861	19,450	- 411	3,190
Air Force Reserve .....	3,588	3,849	3,588	- 261	0
DOD Total .....	78,626	83,062	81,816	- 1,246	3,190

**End strengths for military technicians (dual status) (sec. 413)**

The committee recommends a provision that would establish the minimum number of military technicians (dual status) for the reserve components of the Army and Air Force as of the last day of fiscal year 2019, as shown below:

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Army National Guard .....	22,294	22,294	22,294	0	0
Army Reserve .....	6,492	7,495	6,492	- 1,003	0
Air National Guard .....	19,135	18,969	18,969	0	- 166
Air Force Reserve .....	8,880	9,908	8,880	- 973	0
DOD Total .....	56,801	58,666	56,635	- 1,976	- 166

**Maximum number of reserve personnel authorized to be on active duty for operational support (sec. 414)**

The committee recommends a provision that would establish limits on the number of reserve personnel authorized to be on Active Duty for operational support under section 115(b) of title 10, United States Code, as of September 30, 2019, as shown below:

Service	FY 2018 Authorized	FY 2019		Change from	
		Request	Recommendation	FY 2019 Request	FY 2018 Authorized
Army National Guard .....	17,000	17,000	17,000	0	0
Army Reserve .....	13,000	13,000	13,000	0	0
Navy Reserve .....	6,200	6,200	6,200	0	0
Marine Corps Reserve .....	3,000	3,000	3,000	0	0
Air National Guard .....	16,000	16,000	16,000	0	0
Air Force Reserve .....	14,000	14,000	14,000	0	0
DOD Total .....	69,200	69,200	69,200	0	0

**Subtitle C—Authorization of Appropriations**

**Military personnel (sec. 421)**

The committee recommends a provision that would authorize the appropriations for military personnel activities at the levels identified in section 4401 of division D of this Act.

**Limitation on use of funds for personnel in fiscal year 2019 in excess of statutorily specified end strengths for fiscal year 2018 (sec. 422)**

The committee recommends a provision that would prohibit the Department of Defense from increasing end strengths for the various military departments and components beyond the levels authorized by the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) until the Secretary of Defense submits the report on “Highest-Priority Roles and Missions of the Department of Defense and the Armed Forces” required elsewhere in this Act.

**Budget Items**

**Military personnel funding changes**

The amount authorized to be appropriated for military personnel programs includes the following changes from the budget request:

[Changes in millions of dollars]

Military personnel underexecution .....	– 1,937.1
End strength reduction .....	– 993.2
Foreign currency fluctuation .....	– 133.0
Junior Reserve Officers’ Training Corps increase .....	+1.22
Total .....	– 3,062.08

The committee recommends a total reduction in the Military Personnel (MILPERS) appropriation of \$3,062.08 million. This amount includes: (1) A reduction of \$1,937.1 million to reflect the Government Accountability Office’s most recent assessment annual MILPERS under execution; (2) A decrease of \$993.2 million to reflect active and reserve component end strength reductions from the President’s Budget request; (3) A decrease of \$133.0 million for foreign currency fluctuation; and (4) An increase of \$1.22 million for Junior Reserve Officers’ Training Corps.

## **TITLE V—MILITARY PERSONNEL POLICY**

### **Subtitle A—Officer Personnel Policy**

#### **Part I—Officer Personnel Management Reform**

##### **Modernizing officer personnel management in support of the National Defense Strategy**

The 2018 National Defense Strategy states correctly that “the creativity and talent of the American warfighter is our greatest enduring strength.” Furthermore, the strategy calls for a “broad revision” of talent management principles among the armed services to increase the lethality and adaptability of the force. The committee supports these priorities and recommends several provisions to modernize officer personnel management and bolster the effectiveness, recruitment, and retention of the all-volunteer force.

Officer personnel management is a complex combination of statute, regulation, culture, and tradition that determines how military leaders are recruited, trained, retained, promoted, assigned, and compensated. Despite its importance, a personnel system is not an end unto itself. An effective officer personnel system must achieve desired military outcomes, which are based on a coherent defense strategy. When the personnel system becomes out of alignment with the strategy, the system must be revised. This is precisely the situation facing the current officer personnel management system.

Officer careers are managed according to the tenets of the 38-year-old Defense Officer Personnel Management Act (DOPMA) (Public Law 96-513). DOPMA places strict limitations on commissioned officer personnel management and requires all military Services to manage their officer corps in the same general manner within specific statutory constraints. DOPMA limits the number of officers who may be allowed to serve in mid-grade officer ranks, how an officer is appointed, when an officer may be promoted, how promotion decisions will be made, and when an officer should be removed from service.

Over the last several years, the committee has carefully studied the legislation, policy, and practice governing officer careers. The committee held public hearings on the topic in 2015, 2017, and 2018, where expert civilian and military leaders urged reform. In 2017, committee staff visited each military Service personnel headquarters to gain an in-depth understanding of how DOPMA is implemented on a day-to-day basis. The committee hosted multiple member and staff policy meetings to thoroughly understand current policy and options for reform, including recommendations from the Department of Defense. Based on the committee’s thorough research and deliberate process, the committee recommends several provisions to modernize DOPMA to properly orient the officer corps for the threats identified by the National Defense Strategy.

DOPMA was based on the assumption that the Armed Forces would primarily be required to defeat a single adversary, namely the Soviet Union. It was drafted at a time when lawmakers could not have foreseen the variety of challenges facing today's military. In 1980, the primary military outcome DOPMA was designed to achieve was building and maintaining a perpetually young and vigorous force prepared for the large-scale maneuver warfare tactics of the Cold War. To achieve this outcome, DOPMA continued and strengthened an "up-or-out" promotion system as the fundamental concept for the management of officer personnel. The committee report (H. Rpt. 96-1462) accompanying the DOPMA legislation stated, "The simple fact is that if the system is working right, it will, of necessity, result in passover for promotion of officers who are fully qualified to serve in the next-higher grade."

Today, strategy, tactics, and dramatically different military demographics demand different outcomes from a personnel system than what DOPMA was designed to achieve. The 2018 National Defense Strategy notes the United States faces "a security environment more complex and volatile than any we have experienced in recent memory." To respond to this volatility, the strategy calls for a "lethal, resilient, and rapidly adapting Joint Force." Rapid adaptability, rather than youth and vigor, is the primary outcome that must be achieved by a modernized officer personnel system.

Adaptability in the context of officer personnel policy means the ability to quickly recruit, promote, and retain the officers required to respond to emerging threats. To achieve this outcome, the committee recommends several provisions that de-emphasize predetermined promotion timelines and rigid constraints on officer manpower. Additionally, the committee recommends expanding constructive credit authority to allow the military to quickly recruit experienced personnel from the civilian labor pool. These provisions modernize rather than overturn the fundamental officer management principles that have served the military well over the past many decades.

Force utilization and demographics must also be considered carefully in designing effective personnel policy. The authors of DOPMA never envisioned the post-Cold War military as presently constructed and utilized. Today's force is 43 percent smaller than the military of 1980 and is constantly engaged in ways never predicted during the Cold War. Repeated overseas combat deployments strain the more traditional warfighting career fields, as new military domains require entirely different officer skills.

Designing a personnel system capable of adapting to the unique concerns of hundreds of different officer specialties and career fields means moving away from a "one-size-fits-all" construct for officer management. Those officers subject to frequent overseas deployments may benefit from the opportunity to opt out of competing for promotion to free up time to pursue an unusual career opportunity. Officers in the burgeoning cyber and information warfare career fields are very likely to be best served by specially designed promotion and management policies.

As the all-volunteer force has matured over the last forty years, new policies have thoroughly changed the demographics of the officer corps, with women and married servicemembers comprising a

much larger percentage of the military than in 1980. Over 11 percent of married officers are in a dual-military marriage, which means those families must balance the demands of two full-time military careers. These changes have strengthened the officer corps but have never been seriously considered as a factor when designing suitable officer management policy.

To respond to these demographic realities, the committee recommends a number of provisions to emphasize individual merit and to provide opportunities for more individually-tailored career paths. In today's competitive labor market, it is crucial to balance military necessity with the ability of servicemembers to have greater influence over their careers. In the vast majority of circumstances both interests can be achieved without sacrificing the unique concerns of a servicemember or the legitimate demands of a military career.

Up-or-out remains an important foundation for officer personnel management. Not every officer can or should be retained for a full career. However, today the up-or-out promotion system has largely been replaced with an unofficial up-and-stay system. Though each military Service still routinely separates officers who fail to promote to the rank of major or lieutenant commander, the promotion rate to this rank has steadily increased to the point where only a few officers are not promoted. For example, in 2017, the Air Force announced a 100 percent promotion opportunity to the rank of major, and since 2001, the Army's average promotion rate to major has been 88 percent. Each Service generally allows officers who reach major or lieutenant commander to remain on Active Duty until reaching retirement eligibility. Additionally, each of the Services often utilizes selective continuation authority to retain the relatively few officers who fail to promote to major or lieutenant commander.

The committee continues to believe that up-or-out is an important principle for a large portion of the officer corps. However, not every officer career field should be forced to resemble a pyramid, with a large number of junior officers ultimately feeding fewer mid-level officers and fewer still senior ranking officers. Rather, some career fields would be best served with a structure that provides for a relatively small number of junior officers while supporting a larger number of mid-level officers. DOPMA and other policies make this a difficult outcome to achieve. The committee therefore recommends provisions that would provide additional flexibility to adjust the shape of the officer corps by discontinuing the authorized officer strength table, which caps the number of mid-level officers.

The committee emphasizes that these updates to officer management are not motivated by the performance of currently-serving officers. The officer corps continues to provide strong and effective leadership for the all-volunteer force. However, this committee believes that in many cases, the military produces high-quality officers despite the current personnel system rather than because of it. Moreover, the challenges facing the military demand a modernized officer personnel system to ensure the military can harness the talent of the next generation of competent, agile leaders. Therefore, the committee recommends a series of proposals that would

provide necessary updates to officer management while also protecting the fundamental requirements of a military career.

**Repeal of codified specification of authorized strengths of certain commissioned officers on active duty (sec. 501)**

The committee recommends a provision that would amend section 523 of title 10, United States Code, to require the Congress to annually authorize the number of officers serving in the grades of major, lieutenant colonel, and colonel in the Army, Air Force, and Marine Corps or lieutenant commander, commander, and captain in the Navy. This provision would repeal the authorized officer strength table, including all of the previous exceptions to the officer strength table.

The committee notes the officer strength table was originally included as a fundamental feature of the Defense Officer Personnel Management Act (DOPMA) (Public Law 96-513). The strength table was designed to serve as an effective limitation on the number of mid-grade officers within each service. The House report to accompany the legislation (H. Rept. 96-1462) explained that the table would be adjusted over time to align with emerging officer manpower requirements. However, in practice the authorized strength table has rarely been updated and is no longer linked to strategy or actual officer requirements.

As of the end of fiscal year 2017, each service is largely unaffected by the limitations imposed by the strength table. For example, the Army finished fiscal year 2017 at approximately 78 percent of their authorization for officers serving in the grade of major. Majors in the Air Force and Marine Corps were respectively at 88 percent and 86 percent of authorized levels. While each service operates more closely to the strength table limit for progressively higher grades (e.g., the Air Force was manned at approximately 96 percent of authorized lieutenant colonel end strength), none of the services are effectively limited by the table as envisioned by the original DOPMA legislation.

The committee authorizes annual end strength levels for the overall active and reserve component and numerous other subsets of total force manpower. This allows end strength to fluctuate to meet strategic and budgetary necessities. Similarly, this provision would require each military service to annually justify required mid-grade officer manpower needs to support an annual authorization from Congress. This provision provides greater flexibility to the military, while also ensuring Congress continues to perform its vital oversight role in ensuring the officer corps is effectively managed.

**Annual defense manpower requirements report matters (sec. 502)**

The committee recommends a provision that would amend section 115a of title 10, United States Code, to require the Annual Defense Manpower Requirements Report be submitted on the same day as the date on which the President submits the budget request for the next fiscal year to Congress.

The provision would also require the Secretary of Defense to include two new elements in the Annual Defense Manpower Require-

ments Report. These new elements are: (1) The anticipated promotion opportunity for officer promotion boards expected to occur during the upcoming fiscal year; and (2) The number of officers required to serve during the upcoming fiscal year in the rank of major, lieutenant colonel, and colonel for the Army, Air Force, and Marine Corps and lieutenant commander, commander, and captain for the Navy.

The Annual Defense Manpower Requirements Report is a crucial tool for effective congressional oversight of military personnel. The report requirement was the result of fundamental concern when drafting the Defense Officer Personnel Management Act (DOPMA) (Public Law 96-516). As the committee stated in the House report accompanying the legislation (H. Rept. 96-1462) “Although the committee is generally satisfied with the assessment of grade requirements, significant uncertainty exists in justifying the need for some of these requirements.” The Annual Defense Manpower Requirements Report was designed to provide coherent justification of manpower needs to the Congress.

The committee notes with disapproval that the Department of Defense has habitually disregarded the statutory deadline for the Annual Defense Manpower Requirements Report. In fiscal year 2018, the Department submitted the report over six months late. The fiscal year 2019 report is expected to be submitted nearly three months late. The Department’s disregard for a long-standing legal requirement inhibits Congress’s ability to provide effective oversight of the military’s most valuable resource, which is the people who volunteer to serve.

**Repeal of requirement for ability to complete 20 years of service by age 62 as qualification for original appointment as a regular commissioned officer (sec. 503)**

The committee recommends a provision that would amend section 532 of title 10, United States Code, to repeal the requirement that original officer appointments may only be granted to individuals who are able to complete 20 years of commissioned service prior to reaching age 62.

**Enhancement of availability of constructive service credit for private sector training or experience upon original appointment as a commissioned officer (sec. 504)**

The committee recommends a provision that would amend sections 533 and 12207 of title 10, United States Code, to authorize service secretaries to award constructive credit to newly-appointed active and reserve component officers for special training or experience not to exceed the amount of constructive credit required for appointment in the grade of colonel in the Army, Air Force, and Marine Corps or captain in the Navy. This provision would also repeal the temporary authority to award constructive credit for critically necessary cyberspace-related experience.

The committee notes that this provision explicitly authorizes service secretaries to award constructive credit for any special experience, to include cyberspace-related experience, directly supportive the operational needs of each service. This provision is intended to allow the military departments to recruit individuals

more easily from the private sector with relevant knowledge that may be in short supply within a given service. However, a manpower shortage is not the only reason to utilize expanded constructive credit authority. This provision may also be used to increase the diversity of experience within the officer corps, particularly in career fields that closely resemble occupations outside of the military (e.g., program management, financial management, prosecutors, etc.).

Traditionally, officer personnel management resembles the structure of a pyramid, with large numbers of junior officers required to fill smaller numbers of mid-grade and senior officer requirements. This may no longer be the ideal construct for all officer career fields. The committee envisions some career fields requiring relatively few junior officers, while still requiring larger numbers of mid-grade and senior officers. This provision would allow the Services to recruit those mid-grade and senior officers from the civilian labor pool by offering the incentives of a higher initial rank along with a more competitive compensation package.

The committee notes the Army already structures some officer specialties with more senior-ranking than junior-ranking officers through its Voluntary Branch Transfer Incentive Program. This program allows lieutenants, captains, and majors to transfer out of occupational specialties with fewer mid-grade officer requirements (e.g., infantry) into other occupational specialties that require more senior officers (e.g., financial management). While the Army's program is a useful retention tool, in some cases it may be more effective to recruit individuals with private-sector experience to fill these mid-grade officer ranks.

This provision encourages the sort of rapid adaptability envisioned by the National Defense Strategy. By allowing the Services to recruit talented Americans at later stages of a career, the military can quickly build and shape new units to respond to emerging threats.

**Standardized temporary promotion authority across the military departments for officers in certain grades with critical skills (sec. 505)**

The committee recommends a provision that would amend chapter 35 of title 10, United States Code, by adding a new section to authorize each military service to award temporary promotions to the grade of O-4, O-5, and O-6 for officers serving in specified positions. This provision would also repeal a similar authority, which was previously only applicable to the Navy.

The temporary promotion authority that would be provided by this provision must be utilized to fill positions requiring certain critical skills. This authority is designed to help the Services fill the gap between operationally challenging billets and the officers who are available to fill those assignments. Additionally, this authority would offer a valuable retention tool by incentivizing certain high-performing officers in low-density career fields to volunteer for challenging assignments with the promise of an earlier promotion.

The committee notes a similar authority has existed in the Navy for decades. The Navy has utilized "temporary spot promotions" to

fill critical lieutenant commander billets in the nuclear engineering and special warfare communities. This provision would allow the other services to utilize similar authority as currently provided to the Navy and also expand the program to temporarily promote officers to the rank of captain, lieutenant colonel, and colonel in the Army, Air Force, or Marine Corps or lieutenant, commander, and captain in the Navy.

While the temporary promotions authorized by this provision are designed to occur earlier in an officer's career than would normally be the case, the committee notes that this provision also requires a promotion board to select an officer for a temporary promotion, thereby providing an effective control measure to ensure only high-performing and skilled officers are selected for these prestigious appointments.

As the committee continues to look for opportunities to provide flexibility within the officer management system, this provision is an important tool to allow service secretaries to shape their officer corps to respond to rapid changes in officer requirements. Temporary spot promotions could be used to fill vacancies in numerous officer career fields where the demand for mid-grade officers frequently exceeds the available supply. For example, the Air Force currently has mid-grade officer shortages in logistics and information operations, the Army continues to seek mid-grade officers for information warfare and other technical specialties, the Navy would be able to expand its existing program for higher-level assignments in nuclear and special warfare, and the Marine Corps could utilize this authority to fill shortages in technically-oriented career fields like financial and program management. While these are examples meant to illustrate the utility of temporary spot promotion authority, the committee looks toward the military departments to develop creative uses for this authority.

**Authority for promotion boards to recommend officers of particular merit be placed higher on a promotion list (sec. 506)**

The committee recommends a provision that would amend section 616 and section 14108 of title 10, United States Code, to authorize service secretaries to allow officer promotion selection boards to place officers of particular merit higher on a regular or reserve promotion list.

In recommending this provision, the committee emphasizes that officer performance should be the most important factor in promotion determinations. This provision would allow high-performing officers to be promoted earlier than others, to include those officers who meet the promotion board after having already been passed over in a previous board. A similar authority has been used extensively by the U.S. Coast Guard for the last 16 years with great success.

The committee encourages service secretaries to take advantage of this authority wherever possible. Recognizing high-performing officers through earlier promotions would improve the military's ability to continue building an officer corps based on merit, character, and performance.

**Authority for officers to opt out of promotion board consideration (sec. 507)**

The committee recommends a provision that would amend section 619 and section 14301 of title 10, United States Code, to authorize service secretaries, based on the request of an officer and only when deemed to be in the best interests of the military departments, to remove an officer from consideration by a selection board for promotion to the next higher grade.

**Competitive category matters (sec. 508)**

The committee recommends a provision that would amend section 621 of title 10, United States Code, to require that service secretaries establish competitive categories by grouping officers occupying similar qualifications, specialties, occupations, or ratings. The provision would also prohibit the practice of requiring service secretaries to provide consistent promotion timing or promotion opportunity among various competitive categories in each military Service.

Under current law, service secretaries have broad authority to establish competitive categories for the purposes of officer promotion and management. As a result, each military Service has pursued a different approach, with the Navy utilizing 20 different competitive categories, while the Marine Corps groups all of its officers into 2 competitive categories. Though the committee does not desire to mandate a specific number of competitive categories for each Service, in general, the committee believes service secretaries should make greater use of competitive category authority.

The committee notes that within a given competitive category, service secretaries may tailor promotion timing, increase or decrease desired promotion opportunity, and customize guidance to promotion boards. These are important tools in managing the wide variety of officer careers in today's military. Furthermore, as today's force grows increasingly specialized and technical, competitive categories must be built to achieve specific career outcomes for individual officer career fields.

Lastly, the committee is aware of Department of Defense instructions encouraging the Services to strive for consistent promotion timing and opportunity among various competitive categories. At a time when officer careers can be radically different, it makes little sense to strive for consistency of career outcomes. Officer career fields must be allowed to be customized based on the unique demands of a given specialty.

**Promotion zone matters (sec. 509)**

The committee recommends a provision that would amend section 623 of title 10, United States Code, to require service secretaries to align officer promotion zones with desired officer management outcomes described in the Annual Defense Manpower Requirements Report. The provision would also prohibit service secretaries from determining the number of officers in a promotion zone on the basis of the year in which officers receive their original appointment to their current grade, a practice commonly referred as "year group management."

During the committee's review of officer personnel management policy, it was discovered that some military departments structure officer promotion zones according to year group while other departments form promotion zones to achieve a certain promotion rate or opportunity. While the year group methodology allows for increased predictability for officer promotion timing, it frequently results in larger inefficiencies and a lack of predictability in the actual likelihood of an officer being promoted. For example, when an individual year group is small, promotion rates increase beyond what might be advisable. Alternatively, when an individual year group is large, promotion rates drop precipitously, thereby unfairly punishing some officers who might otherwise have been promoted if they had been commissioned a year earlier or later. This provision would require service secretaries to form promotion zones to achieve more consistent promotion rates that are aligned with the needs of the service, rather than consistent promotion timing.

**Alternative promotion authority for officers in designated competitive categories of officers (sec. 510)**

The committee recommends a provision that would authorize an alternative promotion process for officers in certain, service secretary-designated, competitive categories. This provision would also create a term-based selective continuation process for officers not selected for promotion.

Under the authorities provided by this provision, officers serving in designated competitive categories would have up to five opportunities to be selected for promotion to the next highest grade. The provision would remove below-the-zone and above-the-zone distinctions within the promotion process, thereby allowing all eligible officers to compete for promotion purely on the basis of performance with limited regard for cumulative time served.

In directing a competitive category to make use of the promotion process described in this provision, service secretaries must determine the number of promotion opportunities to be offered to each grade within the competitive category. For example, a service secretary may determine it is desirable to offer five opportunities to compete for promotion to major, while promotion to lieutenant colonel should require only three opportunities. Service secretaries may only make adjustments to the number of promotion opportunities once every 5 years. If the number of promotion opportunities is adjusted downward (e.g., from five to four opportunities), all officers with remaining promotion eligibility under the previous policy would have one more opportunity to compete for promotion.

For many officers the Defense Officer Personnel Management Act (DOPMA) (Public Law 96-513) officer promotion system functions adequately. However, for some officers, DOPMA is unnecessarily constraining and does not achieve desired personnel outcomes. The alternative promotion authority included in this provision is intended to remove some of the most restrictive constraints, while preserving the underlying strengths of the officer promotion process.

The committee also notes that one of the weaknesses of DOPMA is its excessive reliance on tenure as the primary determining factor in officer promotions. Additionally, the law effectively prejudices

any officer who competes for promotion outside of the specified promotion zone. For example, early promotions known as “below-the-zone” are routinely in the low single-digit percentages even though the law allows for up to 10 percent of promotions for below-the-zone officers. While officers previously not selected for promotion remain eligible, they are effectively stigmatized by promotion boards because a previous board did not select them. Consequently, promotion boards frequently and artificially limit their ability to select the most talented officers eligible for promotion so as to not harm those officers who are currently “in the promotion zone.” This effectively limits the promotion board’s ability to select the most talented officers, regardless of tenure, and also limits individual officer career flexibility.

The requirement to compete for promotion according to predetermined timelines places an enormous amount of stress on officer careers. While the Services determine necessary career milestones for continued promotion, under DOPMA the Services have a limited ability to adjust when an officer must compete for promotion. As new requirements are levied on officer careers (e.g., joint assignments, advanced education, deployments, etc.) officers are forced to change assignments much more frequently than might be advisable in order to complete all required milestones prior to competing for promotion. Promotion timelines mandated by DOPMA and other supporting policies reinforce an officer personnel management system that prioritizes breadth of experience rather than depth of experience.

No matter the process or policy, some officers will not be selected for promotion. The committee believes it is important to retain the up-or-out concept for officer management, but there must be some exceptions when the needs of the military will be best served by retaining an officer. The current selective continuation process is too imprecise to ensure only those officers who are most able to contribute to a unit’s success are retained. The Services routinely continue nearly all officers not selected for promotion, effectively disregarding the “selective” aspect of the continuation process. This provision would institute a term-based officer continuation process to allow officers not selected for promotion to continue serving only if they are able to contribute to a specific mission or assignment.

Term-based selective continuation would allow officers to continue serving for renewable 3-year terms in specific predetermined assignments. As personnel management technology continues to advance, the committee envisions assignments for selectively continued officers will be individually matched on the basis of an officer’s unique knowledge, skills, and behavior.

To ensure the successful implementation of the alternative promotion and continuation process contained in this provision, the Secretary of Defense is required to submit a report to the Committees on Armed Services of the Senate and the House of Representatives not later than 180 days after the date of the enactment of this Act with his assessment of the effect of this provision on officer personnel. The committee encourages the Secretary of Defense to work with the military departments in drafting the required report.

Over the last several years, each military department has acknowledged a heightened competition for talent. Competition

breeds innovation, which will be required to ensure the future officer corps is an attractive and effective profession. While the authorities contained in this provision are entirely permissive, the committee encourages the military departments to experiment with the alternative promotion process by crafting novel competitive categories of officers who would be best served by a more flexible promotion policy.

**Applicability to additional officer grades of authority for continuation on active duty of officers in certain military specialties and career tracks (sec. 511)**

The committee recommends a provision that would amend section 637a of title 10, United States Code, to authorize service secretaries to allow officers in the grade of O-2 or above serving in certain specified military specialties to remain on Active Duty until reaching 40 years of active service.

The committee intends this provision be used to allow the military to retain officers with vital knowledge, skills, and experience who may not be interested in or competitive for further promotion. This authority could be utilized in conjunction with other policies to build viable “technical tracks” for certain officer careers, which each military department has expressed an interest in pursuing. These technical tracks would generally be constructed to allow junior officers to remain in selected positions for an extended period of time to build greater depth of technical experience than ordinarily permitted by law or policy. Officers serving in aviation, cyber, maintenance, and special forces are examples where a technical track may be an effective personnel management option.

While there will likely be few junior officers who remain on Active Duty for 40 years, the committee recognizes that it is sometimes counterproductive to force officers to separate or retire at an arbitrary point in time. The manpower needs of each military service should be the primary concern in determining when an officer’s career should be involuntarily ended.

**Part II—Other Matters**

**Matters relating to satisfactory service in grade for purposes of retirement grade of officers in highest grade of satisfactory service (sec. 516)**

The committee recommends a provision that would amend section 1370 of title 10, United States Code, to: (1) Authorize a conditional determination of an officer’s retired grade when the officer is under investigation for alleged misconduct at the time of retirement; (2) Authorize reopening of a determination or certification of an officer’s retired grade under specified conditions; and (3) Provide that determinations of satisfactory service in grade for purposes of determining an officer’s retired grade take into account the officer’s service throughout a military career.

The committee recommends this provision authorizing conditional retirement of an officer who is under investigation in light of the fact that an officer remains subject to the Uniform Code of Military Justice in retired status and thus can still be held accountable for misconduct occurring prior to the officer’s retirement.

**Reduction in number of years of active naval service required for permanent appointment as a limited duty officer (sec. 517)**

The committee recommends a provision that would amend section 5589(d) of title 10, United States Code, to offer permanent appointments to limited duty officers who have completed at least 8 years of active naval service.

**Repeal of original appointment qualification requirement for warrant officers in the regular Army (sec. 518)**

The committee recommends a provision that would repeal section 3310 of title 10, United States Code, which requires original Regular Army warrant officer appointment be made from persons who have served at least 1 year on Active Duty in the Army.

**Uniform grade of service of the Chiefs of Chaplains of the Armed Forces (sec. 519)**

The committee recommends a provision that would require the Secretary of Defense to specify a common grade across the military services for the positions of Chief of Chaplains.

**Written justification for appointment of Chiefs of Chaplains in grade below grade of major general or rear admiral (sec. 520)**

The committee recommends a provision that would require service secretaries to submit a report to the Committees on Armed Services of the Senate and the House of Representatives that provides written justification in the event an individual holding a rank below major general or rear admiral is appointed to the position of Service Chief of Chaplains.

**Subtitle B—Reserve Component Management**

**Authority to adjust effective date of promotion in the event of undue delay in extending Federal recognition of promotion (sec. 521)**

The committee recommends a provision that would amend section 14308(f) of title 10, United States Code, to allow service secretaries to adjust the effective date of promotion for officers in the reserve component if the secretary concerned determines there was an undue delay in the federal recognition process and the delay is not attributable to the action, or inaction, of the officer concerned.

**Authority to designate certain reserve officers as not to be considered for selection for promotion (sec. 522)**

The committee recommends a provision that would amend section 14301 of title 10, United States Code, to authorize service secretaries to defer promotion consideration for reserve component servicemembers in a non-participatory, membership-only status.

Current law requires all servicemembers identified on the Reserve Active Status List (RASL) to be considered for promotion to the next higher grade. This includes certain categories of reservists on the RASL who are in the Individual Ready Reserve (IRR) and

the Standby Reserve, who remain eligible for promotion consideration but are not actively participating.

Most officers upon release from the active component are transferred to the IRR without affiliating with a reserve unit that allows for participation. In some instances, these trained individuals have chosen to temporarily suspend their military career and voluntarily transferred to the IRR for a variety of reasons; others may have secured a civilian opportunity requiring transfer to the Standby Reserve where they are ineligible for participation.

After deciding to resume their active service, some servicemembers learn of their ineligibility due to being twice deferred for promotion, during their time in a non-participatory reserve status. Others, who received their first deferment while in the IRR, potentially lack sufficient time upon returning to participation status—due to timing prior to their next promotion consideration—to demonstrate the potential to serve in the next higher grade and thus are discharged upon receipt of their second deferral for promotion, in accordance with current law. This serves as an obstacle to achieving permeability between the active and reserve component by reducing opportunities to re-affiliate trained and experienced servicemembers should they seek to return to active status.

**Expansion of personnel subject to authority of the Chief of the National Guard Bureau in the execution of functions and missions of the National Guard Bureau (sec. 523)**

The committee recommends a provision that would amend section 10508 of title 10, United States Code, to clarify the authority of the Chief of the National Guard Bureau to employ persons under certain provisions of title 5, United States Code, in furtherance of meeting the requirements of section 1053 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended by section 1084 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) and section 1083 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

**Repeal of prohibition on service on Army Reserve Forces Policy Committee by members on active duty (sec. 524)**

The committee recommends a provision that would amend section 10302 of title 10, United States Code, to permit the Army National Guard of the United States and United States Army Reserve officers serving on Active Duty to serve on the Army Reserve Forces Policy Committee.

**Subtitle C—General Service Authorities**

**Assessment of Navy standard workweek and related adjustments (sec. 531)**

The committee recommends a provision that would require the Secretary of the Navy to conduct a comprehensive assessment of the Navy standard workweek and make related adjustments to how workload is used in shipboard manpower planning.

The committee notes the Government Accountability Office (GAO) published a report on May 18, 2017, titled “Actions Needed to Ensure Proper Size and Composition of Ship Crews” (GAO-17-413), which recommended “the Navy (1) Reassess the standard workweek, (2) Require examination of in-port workload, (3) Require reassessment of the factors used to develop manpower requirements, and (4) Identify the personnel costs needed to man a larger fleet.”

The committee further notes this GAO report states, “In 2014, the Navy conducted a study of the standard workweek and identified significant issues that could negatively affect a crew’s capabilities to accomplish tasks and maintain the material readiness of ships, as well as crew safety issues that might result if crews sleep less to accommodate unaccounted for workload. The Navy study found that sailors were on duty 108 hours a week, exceeding their weekly on-duty allocation of 81 hours.”

**Manning of Forward Deployed Naval Forces (sec. 532)**

The committee recommends a provision that would require the Secretary of the Navy to maintain manning of ships assigned to the Forward Deployed Naval Forces at levels not less than the levels established for each ship class.

**Navy watchstander records (sec. 533)**

The committee recommends a provision that would require the Secretary of the Navy to require key watchstanders on Navy surface ships to maintain a career record of watchstanding hours and specific operational evolutions.

**Qualification experience requirements for certain Navy watchstations (sec. 534)**

The committee recommends a provision that would require the Secretary of the Navy to submit a report to the congressional defense committees on the adequacy of individual training for certain Navy watchstations, including any planned or recommended changes in qualification standards.

**Repeal of 15-year statute of limitations on motions or requests for review of discharge or dismissal from the Armed Forces (sec. 535)**

The committee recommends a provision that would amend section 1553 of title 10, United States Code, to repeal the 15-year statute of limitations on filing claims for review of a discharge or dismissal by service discharge review boards.

**Treatment of claims relating to military sexual trauma in correction of military records and review of discharge or dismissal proceedings (sec. 536)**

The committee recommends a provision that would amend sections 1552 and 1553 of title 10, United States Code, to clarify the treatment of claims for review of a discharge or dismissal relating to military sexual trauma in correction of military records and review of discharge or dismissal proceedings.

### **Subtitle D—Military Justice Matters**

#### **Punitive article on domestic violence under the Uniform Code of Military Justice (sec. 541)**

The committee recommends a provision that would amend subchapter X of chapter 47 of title 10, United States Code, to establish a new punitive article on domestic violence in the Uniform Code of Military Justice.

#### **Inclusion of strangulation and suffocation in conduct constituting aggravated assault for purposes of the Uniform Code of Military Justice (sec. 542)**

The committee recommends a provision that would amend section 928 of title 10, United States Code (article 128 of the Uniform Code of Military Justice), to include strangulation and suffocation in conduct constituting aggravated assault for purposes of the Uniform Code of Military Justice.

#### **Authorities of Defense Advisory Committee on Investigation, Prosecution, and Defense of Sexual Assault in the Armed Forces (sec. 543)**

The committee recommends a provision that would amend section 546 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291) to authorize the Defense Advisory Committee on Investigation, Prosecution, and Defense of Sexual Assault in the Armed Forces (Advisory Committee) to hold hearings and to require other Federal agencies to provide information requested by the Advisory Committee. These authorities are similar to authorities provided to the prior congressionally-mandated, sexual assault-related Response Systems Panel and Judicial Proceedings Panel.

#### **Protective orders against individuals subject to the Uniform Code of Military Justice (sec. 544)**

The committee recommends a provision that would amend chapter 47 of title 10, United States Code, to authorize military judges and military magistrates to issue military protective orders.

#### **Expansion of eligibility for Special Victims’ Counsel services (sec. 545)**

The committee recommends a provision that would amend section 1044e of title 10, United States Code, to expand eligibility for Special Victims’ Counsel services to victims of domestic violence and other aggravated violent offenses.

#### **Clarification of expiration of term of appellate military judges of the United States Court of Military Commission Review (sec. 546)**

The committee recommends a provision that would amend section 950f of title 10, United States Code, to clarify the expiration of the term of an appellate military judge of the United States Court of Military Commission Review.

**Expansion of policies on expedited transfer of members of the Armed Forces who are victims of sexual assault (sec. 547)**

The committee recommends a provision that would require the Secretary of Defense to expand eligibility for expedited transfer to servicemembers who are victims of sexual assault and physical domestic violence.

**Uniform command action form on disposition of unrestricted sexual assault cases involving members of the Armed Forces (sec. 548)**

The committee recommends a provision that would require the Secretary of Defense to establish a uniform command action form, applicable across the Armed Forces, for reporting the final disposition of certain sexual assault cases.

**Inclusion of information on certain collateral conduct of victims of sexual assault in annual reports on sexual assault involving members of the Armed Forces (sec. 549)**

The committee recommends a provision that would require the inclusion of information on certain collateral misconduct of victims of sexual assault in annual reports on sexual assault involving members of the Armed Forces.

**Subtitle E—Member Education, Training, Transition, and Resilience**

**Consecutive service of service obligation in connection with payment of tuition for off-duty training or education for commissioned officers of the Armed Forces with any other service obligations (sec. 551)**

The committee recommends a provision that would amend section 2007(b) of title 10, United States Code, to require an Active-Duty service obligation incurred by an officer for the acceptance of tuition assistance for off-duty training or education be served sequentially with any other service obligation already incurred by the officer.

**Consecutive service of active service obligations for medical training with other service obligations for education or training (sec. 552)**

The committee recommends a provision that would amend sections 2114(d) and 2123(b) of title 10, United States Code, to require that commissioned service obligations incurred as a result of participation in a military intern, residency, or fellowship training program shall be served consecutively with other commissioned service obligations incurred for education or training. This provision would apply to individuals beginning participation in medical training programs on or after January 1, 2020.

**Clarification of application and honorable service requirements under the Troops-to-Teachers Program to members of the Retired Reserve (sec. 553)**

The committee recommends a provision that would amend section 1154(d)(2)(B) of title 10, United States Code, to require that members transferred to the Retired Reserve who wish to submit applications to participate in the Troops-to-Teachers program must do so not later than 3 years after the date of the transfer. This provision would apply the same application submission requirement to members transferred to the Retired Reserve in the same way the requirement currently applies to eligible members who are retired, separated, or released from Active Duty.

**Prohibition on use of funds for attendance of enlisted personnel at senior level and intermediate level officer professional military education courses (sec. 554)**

The committee recommends a provision that would prohibit the use of any funds authorized to be appropriated for the Department of Defense for the purpose of the attendance of enlisted personnel at senior level and intermediate level officer professional military education courses. The provision would also repeal section 547 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

**Repeal of program on encouragement of postseparation public and community service (sec. 555)**

The committee recommends a provision that would repeal section 1143a of title 10, United States Code, to strike all references to the Department of Defense's program to encourage members and former members of the Armed Forces to enter into public and community service jobs after discharge or release from Active Duty.

The committee is aware that the only servicemembers to use the program were those members with less than 20 years of Active-Duty service who retired between October 23, 1992, and September 1, 2002. Furthermore, the committee believes that through the Transition Assistance Program, the Department of Defense and its interagency partners continue to fulfill the original intent and responsibility of this program.

**Expansion of authority to assist members in obtaining professional credentials (sec. 556)**

The committee recommends a provision that would amend section 2015 of title 10, United States Code, to authorize the Secretary of the Defense and the Secretary of Homeland Security to enable members of the Armed Forces to obtain professional credentials that do not relate to military training if the Secretary concerned determines it is in the best interests of the United States.

**Enhancement of authorities in connection with Junior Reserve Officers' Training Corps programs (sec. 557)**

The committee recommends a provision that would amend chapter 102 of title 10, United States Code, by requiring the Secretary of Defense to offer to convert closing Junior Reserve Officers' Training Corps (JROTC) detachments into National Defense Cadet

Corps organizations. This provision would also provide flexibility to service secretaries in setting JROTC instructor hiring and compensation policy. Additionally, the provision would require the Secretary of Defense to standardize JROTC detachment data collection methods and policy across the military departments.

**Subtitle F—Defense Dependents’ Education and Military  
Family Readiness Matters**

**Part I—Defense Dependents’ Education Matters**

**Continuation of authority to assist local educational agencies that benefit dependents of members of the Armed Forces and Department of Defense civilian employees (sec. 561)**

The committee recommends a provision that would authorize \$40.0 million in Operation and Maintenance, Defense-wide, for continuation of the Department of Defense (DOD) assistance program to local educational agencies impacted by enrollment of dependent children of military members and DOD civilian employees.

**Impact aid for children with severe disabilities (sec. 562)**

The committee recommends a provision that would authorize \$10.0 million in Operation and Maintenance, Defense-wide, for impact aid payments for children with disabilities (as enacted by Public Law 106–398; 114 Stat. 1654A–77; 20 U.S.C. 7703a) using the formula set forth in section 363 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106–398), for continuation of Department of Defense assistance to local educational agencies that benefit eligible dependents with severe disabilities. Subsection (b) of the provision would allow the Secretary of Defense to use \$5.0 million of the total amount authorized for payments to local educational agencies with higher concentrations of military children with severe disabilities at the Secretary’s discretion and without regard to the formula set forth in section 363 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106–398).

**Department of Defense Education Activity policies and procedures on sexual harassment of students of Activity schools (sec. 563)**

The committee recommends a provision that would equally apply the provisions contained in title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.), with respect to education programs and activities receiving Federal financial assistance, to the education programs and activities administered by the Department of Defense Education Activity (DODEA). The provision would require DODEA to establish policies and procedures, not later than March 31, 2019, to protect students at DODEA schools who are victims of sexual harassment.

The committee understands that student victims of sexual harassment in DODEA schools do not have the same rights and protections as those available to students attending U.S. public schools. The committee believes that DODEA’s current policies and

procedures for response to sexual harassment cases fail to respect the rights of victims and lead to inadequate and insufficient responses to complaints of sexual harassment in its schools.

## **Part II—Military Family Readiness Matters**

### **Improvement of authority to conduct family support programs for immediate family members of the Armed Forces assigned to special operations forces (sec. 566)**

The committee recommends a provision that would modify section 1788a of title 10, United States Code, pertaining to the authority for the Commander, U.S. Special Operations Command to conduct support programs for immediate family members of members of the Armed Forces assigned to special operations forces. The modification is intended to clarify the types of support services that are authorized under this program. The committee notes that when this program was codified by section 555 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), the intent was that the types of support activities provided previously under the pilot program were to continue under the permanent authority.

### **Expansion of period of availability of Military OneSource program for retired and discharged members of the Armed Forces and their immediate families (sec. 567)**

The committee recommends a provision that would require the Secretary of Defense to prescribe regulations to extend eligibility for the Military OneSource program of the Department of Defense of an eligible individual retired, discharged, or otherwise released from the Armed Forces and their eligible family members to the 1-year period beginning on the date of retirement, discharge, or release of the individual.

### **Expansion of authority for noncompetitive appointments of military spouses by Federal agencies (sec. 568)**

The committee recommends a provision that would amend section 3330d of title 5, United States Code, to authorize the head of a Federal agency to appoint non-competitively either a spouse of a member of the Armed Forces on Active Duty or a spouse of a disabled or deceased member of the Armed Forces.

### **Improvement of My Career Advancement Account program for military spouses (sec. 569)**

The committee recommends a provision that would require the Secretary of Defense to take appropriate actions to ensure that military spouses eligible for participation in the My Career Advancement Account (MyCAA) program are made aware of the program. The provision would require the Comptroller General of the United States to submit a report to the Committees on Armed Services of the Senate and the House of Representatives within 180 days of the date of the enactment of this Act, providing recommendations regarding mechanisms: (1) To increase awareness of the program among eligible military spouses; and (2) To increase participation in the program. Additionally, the provision would re-

quire the service secretaries to take actions to ensure career counselors at military installations receive appropriate training and current information on eligibility and benefits utilization under the MyCAA program, including financial assistance for the costs associated with portability of occupational licenses, professional credentials exams, and professional re-certification.

**Access to military installations for certain surviving spouses and other next of kin of members of the Armed Forces who die while on active duty or certain reserve duty (sec. 570)**

The committee recommends a provision that would require the Secretary of Defense, acting jointly with the Secretary of Homeland Security, to establish procedures whereby an eligible surviving spouse and certain other next of kin of members of the Armed Forces may obtain access without escort, as appropriate, to military installations to receive benefits to which they may be entitled by law or policy. This provision would require establishment of such procedures not later than 1 year after the date of the enactment of this Act.

**Department of Defense Military Family Readiness Council matters (sec. 571)**

The committee recommends a provision that would amend paragraphs (1)(B) and (2) of subsection (b) of section 1781a of title 10, United States Code, to: (1) Authorize a change in membership of the Military Family Readiness Council (MFRC); and (2) Change the term of service from 3 years to 2 years for military family organizations serving on the MFRC. The provision would also amend subsection (d), paragraph 2, of such section to require the MFRC to review and make recommendations to the Secretary of Defense to improve collaboration, awareness, and promotion of accurate and timely military family readiness information and support services by policy makers, service providers, and targeted beneficiaries. Finally, the provision would amend subsection (e) of such section to change the submission date for the MFRC's annual report from February 1 to July 1 of each year.

**Multidisciplinary teams for military installations on child abuse and other domestic violence (sec. 572)**

The committee recommends a provision that would require the service secretaries to establish and maintain multidisciplinary teams on child abuse and other domestic violence at military installations to: (1) Share information among teams and other appropriate personnel regarding the progress of investigations and the resolution of incidents of child abuse and other domestic violence involving members of the Armed Forces stationed at or assigned to installations; (2) Provide for and enhance collaborative efforts among teams and other appropriate personnel of the installations regarding investigations into and resolution of incidents; (3) Enhance the social services available to military families at the installations in connection with incidents, including through the enhancement of cooperation among specialists and other personnel providing services to military families in connection with incidents;

and (4) Conduct other duties regarding the response to child abuse and other domestic violence at the installations as the Secretary concerned considers appropriate. The provision would prescribe the composition, expertise and training, and ongoing responsibilities (including coordination and collaboration with non-military services or resources on child abuse or other domestic violence) of teams. Additionally, the provision would require each Secretary concerned to submit a report to Congress, not later than March 1, each year through 2022, on the activities of multidisciplinary teams under their jurisdiction during the preceding year.

**Provisional or interim clearances to provide childcare services at military childcare centers (sec. 573)**

The committee recommends a provision that would require the Secretary of Defense to implement a policy to permit the issuance of clearances, on a provisional or interim basis, for the provision of supervised childcare services by personnel at military childcare centers. This provision would provide that any clearance issued under the policy shall be temporary and contingent upon the satisfaction of the requirements for issuance of a clearance on a permanent basis. The committee believes this provision would help shorten the hiring process and improve the availability of childcare services at military childcare centers, thereby enhancing military family readiness.

**Pilot program on prevention of child abuse and training on safe childcare practices among military families (sec. 574)**

The committee recommends a provision that would require the Secretary of Defense, acting through the Defense Health Agency, to conduct a pilot program at military installations to assess the feasibility and advisability of universal home visits to provide eligible covered beneficiaries and their families training on safe childcare practices aimed at: (1) Reducing child abuse and fatalities due to abuse and neglect; (2) Assessing risk factors for child abuse; and (3) Connecting families with community resources to meet identified needs.

The provision would prescribe the scope and elements of the pilot program, including the requirement for home visits of eligible beneficiaries by a team led by a nurse, whenever practicable. The Secretary would be required to inform all eligible beneficiaries of the program and participation in the program would be at the election of the beneficiary. In conducting the pilot program, the Secretary would carry out not fewer than five implementation assessments to assess the feasibility of the elements and requirements of the program. These assessments would occur at not less than 5 military installations and conclude not later than 2 years after the date of the enactment of this Act.

The Secretary would submit an initial report to the Committees on Armed Services of the Senate and the House of Representatives, not later than 180 days after the date of the enactment of this Act, which describes how the Department would carry out the program. The Department would then submit a final report to the same committees not later than 180 days after completion of the pilot pro-

gram. Finally, the provision would require the Secretary to implement the pilot program at all military installations if he determines that any element of the program is effective.

**Pilot program on participation of military spouses in Transition Assistance Program activities (sec. 575)**

The committee recommends a provision that would require the Secretary of Defense to conduct a pilot program, at not fewer than five military installations, to assess the feasibility and advisability of permitting military spouses to participate in activities under the Transition Assistance Program. The Secretary would carry out the pilot program during the 5-year period beginning on the date of the enactment of this Act. The provision would require the Secretary to submit an initial report describing the pilot program to the Committees on Armed Services of the Senate and the House of Representatives within 6 months after the date of the enactment of this Act. In addition, the Secretary would submit a final report to the same committees within 6 months after completion of the pilot program.

**Small business activities of military spouses on military installations in the United States (sec. 576)**

The committee recommends a provision that would require the Secretary of Defense to submit a report to Congress providing an assessment of the feasibility and advisability of permitting military spouses to engage in small business activities on military installations in the United States in partnership with commissaries, exchange stores, and other morale, welfare, and recreation facilities of the Armed Forces.

**Subtitle G—Decorations and Awards**

**Authorization for award of the Distinguished Service Cross for Justin T. Gallegos for acts of valor during Operation Enduring Freedom (sec. 581)**

The committee recommends a provision that would authorize the Secretary of the Army to award the Distinguished Service Cross to Staff Sergeant Justin T. Gallegos for acts of valor while serving in Afghanistan on October 3, 2009.

**Award of medals or other commendations to handlers of military working dogs (sec. 582)**

The committee recommends a provision that would require the Secretary of each military department to establish a program for awarding one or more medals or other commendations to handlers of military working dogs.

**Subtitle H—Other Matters**

**Authority to award damaged personal protective equipment to members separating from the Armed Forces and veterans as mementos of military service (sec. 591)**

The committee recommends a provision that would amend chapter 152 of title 10, United States Code, to allow the Secretary of

a military department to award personal protective equipment of the member or veteran that was damaged during deployment to veterans or members separating from the Armed Forces.

**Standardization of frequency of academy visits of the Air Force Academy Board of Visitors with academy visits of boards of other military service academies (sec. 592)**

The committee recommends a provision that would amend section 9355 of title 10, United States Code, to require the United States Air Force Academy Board of Visitors to visit the Air Force Academy at least annually. This provision would align United States Air Force Academy Board of Visitor meeting requirements with other military service academies.

The committee notes that the United States Naval Academy and the United States Military Academy Boards of Visitors annually convene at least three in-person meetings, with two such meetings occurring on the grounds of the respective academy. In standardizing Board of Visitor meeting requirements throughout the military service academies, the committee expects the Air Force Academy to align its Board of Visitor policy to the practices of the other military service academies.

**Redesignation of the Commandant of the United States Air Force Institute of Technology as President of the United States Air Force Institute of Technology (sec. 593)**

The committee recommends a provision that would re-designate the Commandant of the United States Air Force Institute of Technology as the President of the United States Air Force Institute of Technology.

**Limitation on justifications entered by military recruiters for enlistment or accession of individuals into the Armed Forces (sec. 594)**

The committee recommends a provision that would restrict military recruiters from changing the reasons for an individual entering into the Armed Forces to anything other than that individual's stated reason. The committee remains concerned that marketing and advertising metrics related to recruiting efforts continue to lack the ability to demonstrate the effective use of resources.

**National Commission on Military, National, and Public Service matters (sec. 595)**

The committee recommends a provision that would amend sections 551 and 555 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) to revise certain definitions and procedural requirements related to the National Commission on Military, National, and Public Service.

**Burial of unclaimed remains of inmates at the United States Disciplinary Barracks Cemetery, Fort Leavenworth, Kansas (sec. 596)**

The committee recommends a provision that would amend section 985 of title 10, United States Code, to authorize burial at the United States Disciplinary Barracks Cemetery at Fort Leaven-

worth, Kansas, of the remains of military prisoners unclaimed by a person authorized to direct disposition of the remains or by other persons legally authorized to dispose of the remains.

**Space-available travel on Department of Defense aircraft for veterans with service-connected disabilities rated as total (sec. 597)**

The committee recommends a provision that would amend section 2641b of title 10, United States Code, to authorize veterans with a permanent service-connected total disability rating to travel on military aircraft on a space-available basis. The committee notes that this provision would also ensure the primary purpose of space-available travel remains transporting servicemembers and their dependents.

**Items of Special Interest**

**Administrative separation protections for members of the Armed Forces**

The committee supports the existing protections against wrongful discharges enshrined in Department of Defense Instruction 1332.14. This directive states, "Separation for personality disorder, or other mental disorder not constituting a physical disability, is not appropriate nor should it be pursued when separation is warranted on the basis of unsatisfactory performance or misconduct. In such circumstances, the enlisted Service member should not be separated under this paragraph regardless of the existence of a personality disorder." The committee acknowledges that non-disability mental health discharges against combat veterans have dropped significantly since these requirements were put in place. The committee encourages the Secretary of Defense to apply these same standards of protection for all separations.

**Assessment of Department of Defense Education Activity's policies and procedures on student misconduct**

The committee remains deeply concerned about recent media articles, published by the Associated Press, which indicate that the Department of Defense Education Activity (DODEA) and the Services fail to "protect or provide justice to the children of servicemembers when they are sexually assaulted by other children" in Department of Defense (DOD) schools and on military bases. It is disturbing to learn that the DOD's policies and procedures may prevent efforts to help child victims of misconduct, including sexual harassment and sexual assault, and to rehabilitate and hold child offenders accountable.

Therefore, the committee directs the Department of Defense Inspector General to conduct a comprehensive assessment of DOD's and DODEA's policies and procedures regarding misconduct, including sexual misconduct, to help child victims of misconduct and to rehabilitate child offenders, including whether the Department took corrective actions to hold offenders accountable when appropriate. This assessment shall examine the authority of DODEA officials and military commanders to hold offenders accountable for criminal acts and include a review of services available to military

families to address the mental health and other needs of victims of misconduct. The assessment shall also evaluate the adequacy of DODEA's policies to address allegations of serious misconduct occurring in areas and programs that fall within DODEA's area of responsibility, including reporting requirements, and referrals to criminal investigators as well as military and civilian child services. The Inspector General shall provide the report to the Committees on Armed Services of the Senate and the House of Representatives not later than December 1, 2018.

#### **Assessment of relocation of family members**

The committee shares the Department of Defense's commitment to supporting servicemembers and their families whenever they are experiencing a crisis, to include incidents of sexual assault, domestic violence, or child abuse. The committee notes that family members are often located away from their primary support systems, which may make it more difficult to handle these painful situations, heal, and in some circumstances participate in criminal adjudications.

Therefore, the committee directs the Secretary of Defense to assess whether current statutory and regulatory authorities authorize servicemembers and their families to relocate in an efficient and effective manner. The assessment should examine the ability of the Department to expand current policies in order to allow for family members (whether abused by a servicemember with a familial relationship or not) to relocate to a location of their choosing in an expedited manner at government expense, similar to the expedited transfer policy for active duty servicemembers. The committee directs the Secretary to provide its findings to the Committees on Armed Services of the Senate and House of Representatives no later than November 1, 2018.

#### **Comptroller General report on Department of Defense original appointment and scrolling processes**

As the committee continues to look for opportunities to make military personnel management policy more adaptable, the ability of the military to quickly and repeatedly transition servicemembers between the active and reserve components is an important step toward building a true continuum of service. The committee understands that under current policy and practice, transferring an officer from one component to another can take up to 4 months. This extended timeline is likely a contributing factor in declining reserve component affiliation rates and the limited numbers of reserve component officers able to return to the active component.

The committee also understands the current original appointment policy contributes significantly to delays in processing original appointments and promotions for both the active and reserve component. In particular, military department officials have repeatedly stated concerns related to the "scrolling" process used to process officer original appointments. This process may also affect the time required to gain federal recognition of National Guard promotions. Despite the recurring concerns, Department of Defense (DOD) and military officials have been unable to articulate aspects

of the current process that may be accelerated either by policy or legislative changes.

Therefore, the committee directs the Comptroller General of the United States to conduct a review of DOD's original appointment process and to provide preliminary observations to the Committees on Armed Services of the Senate and the House of Representatives by the end of February 2019. At that time, a final product due date will be determined. The review shall include: (1) An explanation of current original appointment processes within all relevant organizations, including the military departments, National Guard Bureau, Office of the Secretary of Defense, the White House Military Office, and the Senate; (2) An explanation of the necessity for hard copy scroll documents; and (3) A discussion of opportunities to accelerate the original appointment process.

#### **Comptroller General study of dependency determinations for incapacitated adult children of military members**

The committee has learned about potential problems associated with dependency determinations made by the Department of Defense for incapacitated adult children. In some instances, adult children lose dependency status if they are placed in group homes or other institutional settings. In other cases, an adult child may not earn wages because those earnings would impact a dependency determination.

As a result, the committee directs the Comptroller General of the United States to conduct a study of the Department's policies, procedures, and processes for determining dependency status of incapacitated adult children. In the conduct of this study, the Comptroller General shall answer the following questions:

(1) To qualify as a military dependent, the servicemember's contribution to the incapacitated adult child's monthly living expenses must be greater than half of the dependent's actual living expenses. What additional criteria does the Department use to determine dependency status of an incapacitated adult child?

(2) How many servicemembers requested incapacitated adult child dependency determinations over the last 5 years? How many dependency determinations did the Department grant, by year, over that time period?

(3) For a servicemember with an incapacitated adult child in a group home or other institutional setting, what options does the servicemember have to keep the family together geographically in the event of a permanent change of station?

(4) What assistance does the Department provide to families as they navigate the dependency determination process?

The Comptroller General shall brief the preliminary results of such study to the committee not later than February 1, 2019. At that time, the committee and the Comptroller General shall determine a mutually agreeable date for submission of the final report.

#### **Dependent care flexible savings accounts**

Congress authorized dependent care flexible spending accounts for federal workers in 2003, but the uniformed services have not yet developed a plan to offer such accounts. The National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) stated

in a Sense of Congress that uniformed servicemembers should be afforded access to pre-tax flexible spending accounts. Additionally, Congress expressed its desire that the Services and government agencies consider life events of members of the uniformed services that are unique to them as members of the uniformed services, including changes relating to permanent changes of duty station and deployments to overseas contingency operations.

Therefore, the committee strongly encourages the Secretary of Defense, with respect to members of the Army, Navy, Marine Corps, and Air Force, the Secretary of Homeland Security, with respect to members of the Coast Guard, the Secretary of Health and Human Services, with respect to commissioned officers of the Public Health Service, and the Secretary of Commerce, with respect to commissioned officers of the National Oceanic and Atmospheric Administration, to implement flexible spending arrangements with respect to basic pay and compensation for dependent care on a pre-tax basis in accordance with regulations prescribed under sections 106(c) and 125 of the Internal Revenue Code of 1986.

#### **Facilitation of separation process and State veterans affairs offices**

The committee is aware that Department of Defense policy allows separating servicemembers to include an email address in the remarks section of the DD Form 214, and that the Department has been working toward electronic delivery of member service and separation data that will allow authorized stakeholders, including State veterans affairs offices, full access to data that will provide faster and better access to benefits for servicemembers.

To this end, the committee believes there is utility in servicemembers providing their email addresses, but is concerned that many choose not to. The committee encourages service secretaries to ensure that separating servicemembers are made aware, during their transition counseling, of the benefits of providing an email address in the remarks block of their DD Form 214. An email address is useful in facilitating receipt of and access to veterans benefits, and to ensure a continued contact with veterans if service-connected injuries or other service-related issues arise post-military service, as they often do.

#### **Improvements to licensure and credentialing for military spouses**

The committee remains concerned about the employment difficulties military spouses face as a result of the rigors and requirements of military life. Whether their 1st or 20th move, many military spouses repeatedly encounter a costly and lengthy process to meet the professional licensure and credentialing requirements of their new State before they can seek meaningful employment in their chosen field.

Depending on the profession and the requirements in each State, military spouses can spend upwards of thousands of dollars to become credentialed or licensed every time they relocate. This cost alone may make it prohibitive for military spouses to continue or pursue their own careers. For many, it is not only the cost, but the time involved. A 2-year assignment does not give a military spouse

much time to find a job if the licensing process in a given State takes 12 months.

In the Blue Star Families Military Family Lifestyle Survey from 2017, 28 percent of military spouses reported they were unemployed and actively seeking work while 55 percent of employed military spouses stated they were underemployed. When compared to the current national unemployment rate of 4.1 percent, it is clear that military spouses experience greater impediments when seeking full-time employment than their civilian counterparts.

While Department of Labor (DOL) and Department of Defense (DOD) resources exist to aid military spouses in finding employment or obtaining licensure and credentials after a move, the committee believes that States are less engaged with their military spouse populations than they should be and are often unaware of the employment hardships military spouses endure. The committee believes that States would benefit from better understanding the significant and unique economic benefits military spouses bring to local communities, which might incentivize States to remove credentialing and licensure barriers faced by military spouses.

The DOL and DOD resources, CareerOneStop and Military OneSource respectively, offer varying and disparate levels of information on the States' requirements for credentials and licensure. CareerOneStop provides more helpful information, while Military OneSource offers a more user-friendly experience. On both web sites, information appears incomplete and outdated. With military families moving every few years, having easily accessible, accurate, and current information on military spouse employment might make the difference between a single-income military family and a dual-income one.

The committee notes there is unfortunately no one-stop resource for military spouses to find the information each State requires on professional credentials and licensure, and therefore directs the Secretary of Defense, in consultation and coordination with the Secretary of Labor, to update the Military OneSource spouse licensure map on its internet web site and to provide a certification letter to the Committees on Armed Services of the Senate and the House of Representatives that the information on the web site is current, accurate, and complete for each State and each profession requiring licensure or certification. Further, the committee directs that this web site be reviewed and updated periodically to ensure its continuing accuracy and usefulness to military families.

Additionally, the committee directs the Secretary of Defense, in consultation with the Secretary of Labor and the National Governors Association, to review existing obstacles to greater military spouse licensure and credentialing portability across the States and to consider solutions to increase such portability and the feasibility of these solutions. The Secretary shall submit a report to the Committees on Armed Services of the Senate and the House of Representatives by no later than March 1, 2019, on the results of this review. The report, at a minimum, shall include: (1) An analysis of the prevalence of military spouses in each State, which would include the total number of military spouses and the percentage of the overall population in the State that are military spouses; (2) The estimated impact of employment of military spouses on State

economies; (3) An assessment of the economic impact of establishing licensing compacts or occupational licensing boards to reduce occupational licensing burdens and to remove certification impediments for military spouses; (4) A summary of economic and other benefits to States relating to increasing occupational licensing reciprocity for military spouses; and (5) A summary of industry association and local business views with respect to the facilitation of greater credentialing and licensure portability for military spouses.

#### **Inclusion of the study of hybrid warfare in professional military education**

The 2018 National Defense Strategy correctly noted that Professional Military Education (PME) in the Department of Defense is “stagnated, focused more on the accomplishment of mandatory credit at the expense of lethality and ingenuity.” The committee agrees with this sentiment and further notes PME curriculum must be capable of adapting and teaching servicemembers about new methods and forms of warfare. Specifically, the emergence of hybrid warfare, where adversaries often employ nonmilitary tools to pursue their interests, is a subject frequently excluded from traditional PME curriculum.

The committee supports the Department of Defense’s renewed focus on PME and therefore directs the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives no later than December 1, 2018, explaining how the Department will emphasize what the National Defense Strategy calls “intellectual leadership and military professionalism in the art and science of warfighting.” In particular, the report should explain how the Department is integrating hybrid warfare concepts into in-residence and distance learning PME curriculum to include the study of past and present hybrid warfare campaigns.

#### **Military childcare subsidies**

The committee directs the Department of Defense to include in its assessment of use of subsidized, off-Installation childcare services, required by subsection (a) of section 575 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), an assessment on modifying the rate of use of subsidized, off-installation childcare services by military families in light of the full implementation of MilitaryChildCare.com, including whether the availability of off-installation childcare services for military families could be increased by altering policies of the Armed Forces on capping the amount of subsidies for military families for such services based on the cost of living for families and the average cost of civilian childcare services.

#### **National Guard Federal promotion delays**

The committee recognizes that soldiers and airmen in the National Guard are unique because their appointments and promotion to a higher rank are governed by their states and are subsequently reviewed and approved for Federal recognition by the Federal Government. The committee continues to believe that a thorough re-

view of officer character and conduct is necessary, but is concerned about reports that bureaucratic obstacles in the scrolling process are unduly slowing Federal recognition of National Guard promotions.

Delays in Federal recognition can have negative consequences for National Guard officers, who often assume a more senior role while waiting for their promotion to be federally recognized, still receiving the pay and benefits of a more junior grade. Delays impact time in grade, or can result in officers being assigned to lesser positions than they are qualified to perform. It also means that National Guard officers may not be assigned to positions of additional responsibility, such as command, when working hand-in-hand with their Active-Duty counterparts on a Federal mission.

Therefore, the committee has included a provision that would provide service secretaries with discretion to adjust the date of rank of National Guard officers when promotions are unduly delayed. The committee urges the service secretaries to use this authority to expeditiously identify and proactively address National Guard officers whose promotions have been unfairly subjected to bureaucratic delay.

#### **National Guard mental health pilot program**

The committee remains concerned with the high suicide rate present in the National Guard and endorses efforts by the Chief of the National Guard Bureau to increase access and resources for behavioral health treatment and support for members of the National Guard. The committee is supportive of the efforts taken by the Chief of the National Guard Bureau to establish the National Guard Warrior Resilience and Fitness Program, an integrated approach to using embedded behavioral health models to leverage enhanced screening tools and predictive analytics to identify mental health risk and provide early, targeted intervention. Not later than December 1, 2018, the Chief of the National Guard Bureau shall provide a letter report to the Committees on Armed Services of the Senate and the House of Representatives on the Warrior Resilience and Fitness Program, including its impact on readiness, resiliency and suicide prevention.

#### **Permanent change of station frequency and impact on military families**

The committee applauds military spouses for being adaptable, resilient, innovative problem solvers with an unwavering commitment to our nation and our military servicemembers. Yet frequent moves to accommodate servicemembers military careers—on average every 3 or 4 years—take a significant toll on spouses ability to maintain viable career paths. By the time military spouses find a home, secure childcare services, and get settled into a new job, it is often time for them to start thinking about the next move. The tempo of these constant moves has multiple effects: (1) Employers are reluctant to hire military spouses knowing there is a good chance they will move soon; (2) Military spouses are left to multiple instances of underemployment or unemployment; and (3) State-approved credentials may not transfer.

Therefore, the committee directs the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives setting forth an assessment of the effects of the frequency of permanent changes of station (PCS) of members of the Armed Forces on stability of employment among military spouses. The report shall include the following: (1) An assessment of the effects of the frequency of PCS of members of the Armed Forces on stability of employment among military spouses, including the contribution of frequent PCS to unemployment or underemployment among military spouses; (2) An assessment of the effects of unemployment and underemployment among military spouses on force readiness; and (3) Such recommendations as the Secretary considers appropriate regarding legislative or administrative action to achieve force readiness and stabilization by minimizing the impacts of frequent PCS on stability of employment among military spouses.

#### **Public-private partnerships on military installations**

The committee is concerned that installation commanders lack clear and consistent guidance on the process and authorities available to them to seek and receive proposals to enter into public-private partnerships with local organizations, which would benefit military communities, servicemembers, and their families. These partnerships range from installation infrastructure and management services (including fire, public safety, emergency medical, and other emergency services), to services for servicemembers, families, retirees, and Department of Defense (DOD) civilians (including morale, welfare, and recreation activities), to mission-type functions (including training opportunities with civilian agencies).

RAND Corporation's 2016 report, *Military Installation Public-to-Public Partnerships*, identified numerous barriers to successful implementation of these types of cooperative efforts. The committee is concerned that DOD is not doing enough to overcome these obstacles, and that the Department's policies and procedures are not clearly defined and disseminated to installation commanders and their staff, further inhibiting successful cooperation. The committee directs the Secretary of Defense to review Department-level policies and procedures to remove obstacles where they are present and to ensure that all installation commanders and base support staffs have received clear guidance outlining approved processes to enter into public-private partnerships.

#### **Reimbursement for certain costs incurred by states during domestic emergencies**

The committee recognizes that the National Guard is an essential force providing effective emergency response capabilities in the Homeland. However, during some complex emergency responses, states are forced to assume fiscal risk that can jeopardize their ability to accomplish the emergency response deployment, and further place individual servicemembers in conditions of compromised individual protection, family protection, and compensation.

The committee notes that a mechanism exists in current law where the Federal Government can reimburse a state that orders its National Guard to State Active Duty to respond to certain do-

mestic emergencies. The committee understands that when the Federal Emergency Management Agency (FEMA) is authorized to reimburse states for National Guard utilization during a domestic emergency, such reimbursement may take over a year to reach the state. The committee further notes that exceedingly long periods for reimbursement reduces states' ability to respond to follow-on domestic emergencies or ones of extended duration. For extended duration emergencies, such as those suffered by states during the 2017 hurricane season, funding requirements can extend beyond the current state fiscal year. The committee also notes that states acting under the Emergency Management Assistance Compact to provide mutual aid to another state during a domestic emergency must obligate their own funds to do so. These states are especially harmed by long reimbursement timelines. Finally, the committee understands these delays in reimbursement can harm military readiness.

Therefore, no later than 180 days after the enactment of this Act, the committee directs the Assistant Secretary of Defense for Homeland Defense and Global Security, in consultation with FEMA and the states, to report to the congressional defense committees on suggested ways to expedite the reimbursement process. The consultations should include consideration of the process for requesting specific orders status, the average time for the Federal Government to answer a request from a state, and the criteria required to approve the request.

#### **Responding to cases of traumatic brain injury sustained in intimate partner violence event**

Survivors of intimate partner violence (IPV) are at increased risk of traumatic brain injuries (TBI), but these injuries often go undiagnosed, which can lead to serious short- and long-term health problems. Currently, there are few research studies available on the relationship between IPV and TBI, and it is uncommon for medical providers to screen or treat for IPV-related TBI in emergency departments. The committee is concerned, therefore, that TBIs resulting from IPV may not be adequately evaluated, diagnosed, and treated in military treatment facilities. As a result, the committee strongly encourages training of all military first responders to help them understand the occurrence of TBI in association with IPV and to recognize those injuries early to expedite further evaluation and treatment. Moreover, victim advocates, law enforcement personnel, prosecutors, and counselors must understand the cognitive and behavioral effects of TBI in association with IPV, such as loss of memory, confusion, or agitation, and know how those effects can impact IPV survivors during an investigation.

#### **Senior Military Acquisition Advisor eligibility**

The committee notes that the Department of Defense requested an amendment to section 1725 of title 10, United States Code, which established the position of Senior Military Acquisition Advisor within each military department. The requested modification would reduce the minimum required commissioned service time for these positions from 30 years to 26 years of active commissioned service.

Typically, current law requires officers who are not selected for promotion to general or flag officer retire upon reaching 30 years of active commissioned service, therefore making it nearly impossible to select an officer to fill the Senior Military Acquisition Advisor position in the required rank of colonel, or in the case of the Navy, captain. The committee understands this restriction and has taken steps elsewhere in this title to allow for officers to continue serving beyond 30 years of service.

Specifically, as part of the committee's efforts to modernize officer personnel management, this title includes a provision to authorize service secretaries to allow officers in the grade of O-2 or above to remain on Active Duty until reaching 40 years of active service. This provision would provide the legal relief requested by the Department, while also ensuring officers assigned to these critical acquisition roles have the experience desired by the committee when it created the Senior Military Acquisition Advisor position.

### **Specialized workshops for transitioning servicemembers**

The committee maintains an ongoing interest that transitioning servicemembers receive the specific training they need to transition successfully to civilian life, whether they choose to pursue higher education, a career in a technical field, or entrepreneurship. Under current law, the Department of Defense must ensure that transitioning servicemembers participate in the Transition Assistance Program (TAP). In response to this requirement, the Department has published regulations and issued instructions that require eligible servicemembers to complete TAP and that require commanding officers ensure that servicemembers complete the program.

Beyond TAP's mandatory core curriculum, servicemembers are also given the option to participate in a more specialized, 2-day workshop in one or more of the following areas: (1) Higher education; (2) Technical and skills training; or (3) Entrepreneurship. The committee is concerned that, while the core curriculum is necessary, it may be insufficient to enable transitioning servicemembers to successfully transition to civilian careers. While transitioning servicemembers may supplement the core curriculum with at least one of the 2-day workshops, these optional activities are rarely utilized. A Government Accountability Office (GAO) report, published in November 2017, titled "DOD Needs to Improve Performance Reporting and Monitoring for the Transition Assistance Program" (GAO-18-23), stated that fewer than 15 percent of transitioning enlisted servicemembers participated in one of the 2-day workshops in fiscal year 2016. In the report, GAO also noted that, at four of the seven military installations it surveyed, commanders "were less inclined to allow servicemembers to attend these classes because they were considered optional."

The committee is concerned that requiring transitioning servicemembers to opt into a 2-day workshop signals to both servicemembers and their commanders that the workshops may be superfluous, thereby discouraging participation. Therefore, the committee encourages the Department to make certain that all TAP-eligible servicemembers participate in one of the 2-day workshops with waivers for servicemembers who expressly decline such

participation or whose participation would conflict with imminent readiness requirements.

### **Training requirement for background check submissions**

The committee is aware that the Department of Defense Inspector General has reported multiple, widespread failures to comply with reporting requirements to send servicemembers' criminal data to the Federal Bureau of Investigation (FBI). The shooter who murdered worshipers in Sutherland Springs, Texas was able to purchase a firearm despite his criminal record because the Air Force failed to submit his information to the FBI. Unfortunately, this is not the only case of a lapse in the incorporation of military criminal records into the FBI's background check databases.

As such, the committee encourages the Department to ensure all personnel of military criminal investigation services who are responsible for assembly or submittal of information to the FBI receive specific training on the requirements, procedures, and processes on how to submit relevant information into the National Instant Criminal Background Check System (NICS). The committee acknowledges that clear, thorough training for military criminal investigation services personnel and other relevant Department personnel will save lives by ensuring all procedures and requirements are followed when reporting and flagging criminal records to NICS.

### **Understanding military family experiences of intimate partner violence and child abuse and neglect**

The committee remains concerned about the rates of violence within military families, which harm those families and impact military family readiness. For fiscal year 2016, there were 13,916 reports of suspected child abuse and neglect to family advocacy programs across the Services with 6,998 of those incidents confirmed. Although rates of reported child abuse have remained flat over the last ten years, the youngest children remain the most vulnerable to lethal forms of abuse. The Department of Defense (DOD) reported 18 child abuse-related fatalities for fiscal year 2016. All of these victims were under 5 years old and 50 percent of them were 1 year old or younger. In five cases, the victim or offender was previously known to Family Advocacy Program (FAP) officials.

Moreover, intimate partner violence is also a significant issue within the Services with 8,673 reported incidents that "met criteria" in fiscal year 2016. DOD reported eight spouse abuse fatalities and one intimate partner fatality related to abuse for fiscal year 2016. In six cases, the victim or offender was known to the FAP. In addition, DOD reported an increase in the occurrence of sexual abuse in intimate partner incidents.

Even though DOD cites the rate of reported child abuse and neglect in the military at about half of the reported rate for the civilian community, there are no data available to estimate the actual prevalence of intimate partner violence and child abuse and neglect in the military. DOD does not conduct a survey of family members and therefore lacks these prevalence rates.

As a result, the committee urges the Department to work with a federally funded research and development center to conduct anonymous surveys of family members to understand better the

prevalence of intimate partner violence and child abuse and neglect in the military. The surveys should include questions pertaining to perpetration of intimate partner violence, victimization, specific incidents and types of physical violence, sexual violence, stalking, psychological aggression, economic abuse and/or interference with military benefits, risk factors, and the unique stressors faced by military families.

#### **Use of data analytics to facilitate assignment matching and military family stability**

As the military migrates toward a talent management personnel paradigm, the committee recommends each service utilize advanced data analytics and new assignment matching technologies to better match servicemembers to available assignments. These technologies make assignment matching more efficient and effective by aligning servicemember skills, knowledge, and behavior with the unique demands of each position. In some cases, it may be in the best interest of the servicemember and the mission to allow an individual to remain in a single location or unit for an extended period of time. Extending assignments often comes with the added benefit of providing stability to military families, who frequently describe constant relocations as a major detractor from their overall satisfaction with military life. The committee encourages the Department of Defense to continue developing advanced assignment matching systems and policies based on data analytics.

#### **Use of reserve personnel for the Cyber Mission Force**

As the military departments continue to formalize their contribution to the U.S. Cyber Command Cyber Mission Force by acquiring, training, and managing personnel with cyber-related capabilities, the committee encourages creative utilization of personnel who serve in the reserve component. The private sector requirement for relevant cyber knowledge and experience continues to grow, which means the reserve component may be the ideal source of personnel who possess the skills necessary to bolster the Cyber Mission Force.

The committee encourages service secretaries to use all personnel authorities at their disposal to attract and retain personnel for the Cyber Mission Force. In particular, the committee is interested in novel approaches to the use of the reserve component for this vital mission. As innovative personnel policies are developed, the committee urges service secretaries to identify legal constraints and to propose changes to current law to improve the military's ability to make itself an attractive employer for the nation's cyber workforce.

#### **Warm handoff for transitioning servicemembers suffering from post-traumatic stress disorder and traumatic brain injury**

The committee notes that traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD) are often considered the "signature wounds" of the conflicts in Iraq and Afghanistan. More than 379,000 servicemembers have received a first-time diagnosis for TBI since 2000, and data from the Department of Veterans Affairs (VA) show that 11–20 percent of veterans who served in Iraq and

Afghanistan experience PTSD every year. Research indicates that TBI and PTSD are often associated with other psychiatric or neurodegenerative conditions, including mood and anxiety disorders, cognitive difficulties, and increased rates of substance abuse and suicidal ideation, which can inhibit recovery.

While initial diagnosis and treatment of PTSD and TBI often occur within the military health system, the VA provides ongoing care for separating servicemembers, including many who have received one or both diagnoses. The committee recognizes efforts by the Departments of Defense and VA in recent years to support the transfer of severely wounded servicemembers with ongoing complex care needs, including establishment of the Interagency Care Coordination Committee to ensure a “warm hand-off” between agencies. However, the committee remains concerned that individuals without visible injuries, including those who are experiencing cognitive or psychiatric difficulties as a result of service-acquired TBI or PTSD, may not be appropriately identified for similar complex care management.

Therefore, the committee directs the Secretary of Defense, in coordination with the Secretary of VA, to establish policies and procedures, no later than December 1, 2018, to ensure continuity of care for any servicemember who has a diagnosis of moderate or severe PTSD or TBI and who enrolls in care through the VA upon transition from Active Duty to veteran status. The Secretary shall submit a report to the Committees on Armed Services and Veterans Affairs of the Senate and the House of Representatives within 30 days after establishing such policies and procedures, describing the actions taken to facilitate better transitions for this population.

## **TITLE VI—COMPENSATION AND OTHER PERSONNEL BENEFITS**

### **Subtitle A—Pay and Allowances**

#### **Fiscal year 2019 increase in military basic pay (sec. 601)**

The committee recommends a provision that would authorize a pay raise of 2.6 percent for all members of the uniformed services effective January 1, 2019.

#### **Repeal of authority for payment of personal money allowances to Navy officers serving in certain positions (sec. 602)**

The committee recommends a provision that would amend section 414 of title 37, United States Code, to eliminate additional personal money allowance to certain naval officers serving as President of the Naval Postgraduate School, Commandant of Midshipmen at the Naval Academy, President of the Naval War College, Superintendent of the Naval Academy, or Director of Naval Intelligence.

Under current law, certain lower-ranking naval flag officers are entitled to a greater personal money allowance than the Chief of Naval Operations or Chairman of the Joint Chiefs of Staff. Additionally, similar positions in the other military services (e.g., Superintendent of the United States Military Academy) are not entitled to the same additional personal money allowance as naval officers. This provision establishes consistent personal money allowance across the Services for general and flag officers of the same rank and position.

#### **Department of Defense proposal for a pay table for members of the Armed Forces using steps in grade based on time in grade rather than time in service (sec. 603)**

The committee recommends a provision that would require the Secretary of Defense to submit a proposal for a time in grade-based pay table for military personnel. This provision would also require the Comptroller General to review the proposal and assess its effect on recruitment and retention.

#### **Financial support for lessors under the Military Housing Privatization Initiative during 2019 (sec. 604)**

The committee recommends a provision that would authorize the Secretary of Defense to pay up to 2 percent of the calculated Basic Allowance for Housing (BAH) rate to specific lessors who provide on-base housing as part of the Military Housing Privatization Initiative (MHPI).

The committee notes that payments authorized by this provision must be approved on a case-by-case basis. The Secretary of Defense should approve payments to individual lessors based on an assessment of the lessor's financial status, condition of housing associated with the lessor, and whether earnings from other privatized housing projects owned by the lessor are sufficient to pay for costs at the specified housing area. Prior to issuing any payment to a lessor, the Secretary of Defense must notify the Committees on Armed Services of the Senate and the House of Representatives.

On March 13, 2018, the Government Accountability Office (GAO) published a report titled "Military Housing Privatization: DOD Should Take Steps to Improve Monitoring, Reporting, and Risk Assessment" (GAO-18-218). Due to a lack of consistent and timely data provided by both the Department of Defense and individual privatized housing lessors, GAO was unable to determine whether recent reductions to Basic Allowance for Housing have had any negative effect on the long-term viability of individual privatized housing projects. Additionally, the decentralized approach pursued by each service for on-base privatized housing agreements makes it difficult to implement a centralized, general policy to correct any identified funding shortfalls. The committee continues to believe, as stated in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) Conference Report (Conf. Rept. 115-404), "This is a problem that the military services and their MHPI partners must solve together."

The committee directs the service secretaries, by no later than September 1, 2018, to report to the Committees on Armed Services of the Senate and the House of Representatives on the relative financial condition and future sustainability of each MHPI project under their jurisdiction and the impact of the BAH rate change on the future sustainability of those projects. Additionally, the service secretaries are directed to implement the recommendations of GAO-18-218 and provide an update to the congressional defense committees by no later than September 1, 2018.

**Modification of authority of President to determine alternative pay adjustment in annual basic pay of members of the uniformed services (sec. 605)**

The committee recommends a provision that would amend section 1009(e) of title 37, United States Code, to remove the justification of serious economic conditions affecting the general welfare from the waiver authority of the President to make an alternative pay adjustment.

**Eligibility of reserve component members for high-deployment allowance for lengthy or numerous deployments and frequent mobilizations (sec. 606)**

The committee recommends a provision that would amend section 436 of title 37, United States Code, to authorize reserve component personnel ordered to Active Duty under section 12304b of title 10, United States Code, to receive a high-deployment allowance for frequent or lengthy deployments.

**Eligibility of reserve component members for nonreduction in pay while serving in the uniformed services or National Guard (sec. 607)**

The committee recommends a provision that would amend section 5538(a) of title 5, United States code, that would include reserve component personnel ordered to Active Duty under section 12304b of title 10, United States Code, under existing protections preventing reduction in pay while absent from a position of employment with the Federal Government.

**Temporary adjustment in rate of basic allowance for housing following identification of significant underdetermination of civilian housing costs for housing areas (sec. 608)**

The committee recommends a provision that would amend section 403(b) of title 37, United States Code, to allow the Secretary of Defense to temporarily adjust current rates of Basic Allowance for Housing (BAH) for a military housing area if the Secretary determines that the actual costs of adequate housing in that military housing area differ from current BAH rates by more than 20 percent. This authority provided by this provision would expire on December 31, 2019.

**Subtitle B—Bonuses and Special and Incentive Pays**

**One-year extension of certain expiring bonus and special pay authorities (sec. 611)**

The committee recommends a provision that would extend for 1 year the general bonus authority for enlisted members, the general bonus authority for officers, special aviation incentive pay and bonus authorities for officers, special bonus and incentive pay authorities for officers in health professions, and contracting bonus for cadets and midshipmen enrolled in the Senior Reserve Officers' Training Corps.

The provision would also extend for 1 year the authority to pay hazardous duty pay, assignment or special duty pay, skill incentive or proficiency bonus, and retention incentives for members qualified in critical military skills or assigned to high priority units.

The provision would also extend for 1 year the authority to pay the nurse officer candidate accession bonus and education loan repayment for certain health professionals who serve in the Selected Reserve.

The provision would also extend for 1 year the authority to pay the special bonus and incentive pay for nuclear officers.

The provision would also extend for 1 year the authority to pay for income replacement for reserve component members experiencing extended and frequent mobilization for Active-Duty service.

The provision would also extend for 1 year the authority of the Secretary of Defense to temporarily increase the rate of the Basic Allowance for Housing in areas impacted by natural disasters or experiencing a sudden influx of personnel.

### **Subtitle C—Disability Pay, Retired Pay, and Survivor Benefits**

#### **Technical corrections in calculation and publication of special survivor indemnity allowance cost of living adjustments (sec. 621)**

The committee recommends a provision that would amend section 1450(m) of title 10, United States Code, to allow the Department of Defense to make special survivor indemnity allowance cost of living adjustments consistent with the survivor benefit plan and military retired pay.

### **Subtitle D—Other Matters**

#### **Rates of per diem for long-term temporary duty assignments (sec. 631)**

The committee recommends a provision that would require the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives by no later than 120 days after enactment of this Act providing a cost-benefit analysis of the long-term per diem policy rate change that became effective on November 1, 2014, consistent with the principles and requirements of Office of Management and Budget Circular A-94. If the Secretary fails to deliver this analysis within 120 days after enactment of this Act, or if the analysis demonstrates that the costs of this policy change outweigh the benefits, and will continue to outweigh the benefits, then the policy reverts to the policy in effect as of October 31, 2014.

#### **Prohibition on per diem allowance reductions based on the duration of temporary duty assignment or civilian travel (sec. 632)**

The committee recommends a provision that would amend section 474(d)(3) of title 37, United States Code, to prohibit the Department of Defense from reducing per diem rates based on the duration of a temporary duty assignment or civilian travel.

### **Items of Special Interest**

#### **Defense Commissary Agency and small businesses**

The committee commends the Defense Commissary Agency (DeCA) for its efforts to achieve cost savings and to provide patrons with an improved shopping experience through its current transformation initiatives. DeCA strives to include small businesses in its acquisition of fresh fruits and vegetables, and these businesses can provide higher quality and fresher produce at competitive prices because of their close proximity to local commissaries. As DeCA's business transformation proceeds, the committee encourages DeCA to continue utilizing small businesses for the acquisition of fresh fruits and vegetables.

#### **Privatized on-base lodging program**

The committee supports the ongoing efforts of the Secretary of Defense to make Department of Defense business operations more

efficient. As the Secretary noted in his February 2017 Memorandum, efficiencies will free up resources to enable “a larger, more capable and more lethal Joint force.” One possible area that should be considered in the Department’s review of business operations is the on-base lodging program.

The committee has watched with interest as the Army has privatized base lodging operations over the last several years. As the Army continues to express satisfaction with its program, the Department is encouraged to analyze the Army’s privatized base lodging program and determine whether a similar model would be suitable for the other military departments. The Department should ensure that any expansion of the privatized base lodging program carefully considers cost, quality, and ability to support the military’s unique mission.

The committee looks forward to reviewing the Department’s analysis as it considers options to consolidate and privatize base lodging for the Navy and Air Force, and urges the Department to keep the congressional defense committees informed before implementing any changes to existing on-base lodging programs.

#### **Small business access to military exchange stores**

The committee encourages the Department of Defense (DOD) to work with the military exchange services to develop strategies for featuring small business products, particularly those from veteran-owned firms, in military exchange stores. The committee acknowledges that exchange stores, as non-appropriated fund instrumentalities of the DOD, are not required to give any preference to vendors and suppliers. However, the committee also recognizes that exchange stores are uniquely positioned to feature products from small businesses, especially veteran-owned firms. Therefore, the committee urges the military exchange services to make a substantive effort to use small businesses as suppliers when possible.



## **TITLE VII—HEALTH CARE PROVISIONS**

### **Subtitle A—Tricare and Other Health Care Benefits**

#### **Consolidation of cost-sharing requirements under TRICARE Select and TRICARE Prime (sec. 701)**

The committee recommends a provision that would amend section 1075 of title 10, United States Code, to consolidate cost-sharing requirements under TRICARE Prime and Select. This provision would eliminate the grandfathering of cost-sharing requirements for beneficiaries enrolled in the TRICARE program prior to January 1, 2018, as authorized in section 701 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328). The amendments under this provision would take effect on January 1, 2019.

The committee is aware that TRICARE beneficiaries enrolled in the TRICARE program prior to January 1, 2018, have experienced higher co-payments for medical services under TRICARE Prime and TRICARE Select than those beneficiaries enrolled after that date. This provision would correct an inequity in the TRICARE benefit among beneficiaries by establishing a single co-payment structure applicable to all TRICARE beneficiaries.

#### **Administration of TRICARE dental plans through the Federal Employees Dental Insurance Program (sec. 702)**

The committee recommends a provision that would amend section 8951(8) of title 5, United States Code, to authorize eligibility of Active-Duty family members, non-activated National Guard/Reserve members, family members of National Guard/Reserve members, and certain survivors under the Federal Employees Dental Insurance Program (FEDVIP) beginning on or after January 1, 2022. This provision would also amend subsection (b) of section 1076(a) of title 10, United States Code, to require the Secretary of Defense to administer TRICARE's dental insurance plans, through an agreement with the Director of the Office of Personnel Management, to allow eligible beneficiaries to enroll in an insurance plan under chapter 89A of title 5, United States Code, in accordance with terms (to the extent practicable as defined by the Director through regulation) prescribed by the Secretary, including terms consistent with subsection (d) and, to the extent practicable in relation to chapter 89A, other provisions of this section.

Section 715 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) authorized beneficiaries eligible for the TRICARE Retiree Dental Program to enroll in a dental insurance plan under the Federal Employees Dental and Vision Insurance Program (FEDVIP). This provision would extend highly regarded dental insurance coverage, available through the FEDVIP,

to eligible TRICARE Dental Program beneficiaries and would provide better choices of dental plans for improved dental health of those beneficiaries.

**Contraception coverage parity under the TRICARE Program (sec. 703)**

The committee recommends a provision that would amend sections 1074d(b)(3), 1075(c), 1075a(b), and 1074g(a)(6) of title 10, United States Code, to require coverage of contraception services for covered beneficiaries under the TRICARE program. The provision would prohibit cost-sharing for any method of contraception provided by a TRICARE network provider and for any prescription contraceptive on the uniform formulary provided by a network retail pharmacy provider or the mail order pharmacy program. The effective date of this provision would be January 1, 2020.

**Pilot program on opioid management in the military health system (sec. 704)**

The committee recommends a provision that would require the Director of the Defense Health Agency to implement a comprehensive pilot program, for a period of not more than 3 years, to minimize early opioid exposure in beneficiaries under the TRICARE program and to prevent misuse or abuse of opioid medications. The pilot program would begin within 180 days of the date of the enactment of this Act, and it would include elements to maximize opioid safety across the entire continuum of care, consisting of patient, physician or dentist, and pharmacist. Additionally, the provision would require the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives, not later than 180 days before the completion of the pilot program, describing the conduct of the program. Finally, the provision would authorize the Director to implement the pilot program on a permanent basis if the Director determines that the pilot program successfully reduces early opioid exposure in TRICARE beneficiaries and prevents progression to misuse or abuse of opioid medications.

**Pilot program on treatment of members of the Armed Forces for post-traumatic stress disorder related to military sexual trauma (sec. 705)**

The committee recommends a provision that would authorize the Secretary of Defense to conduct a pilot program, not to extend beyond 3 years after the date of the enactment of this Act, to assess the feasibility and advisability of using intensive outpatient programs to treat members of the Armed Forces suffering from post-traumatic stress disorder resulting from military sexual trauma, including treatment for substance use disorder, depression, and other issues related to those conditions. Under this provision, the pilot program would be carried out through partnerships with public, private, and non-profit health care organizations or institutions that: 1) Provide health care to members of the Armed Forces; 2) Provide evidence-based treatment for psychological and neurological conditions common to members of the Armed Forces; 3) Provide health care, support, and other benefits to family members of

members of the Armed Forces; and 4) Provide health care under the TRICARE program. The provision would establish pilot program activities and would require the Secretary to install evaluation metrics before commencement of the program. In addition, the provision would require the Secretary to submit an initial report describing the pilot program to the Committees on Armed Services of the Senate and the House of Representatives not later than 180 days after the date of the enactment of this Act. The Secretary would then submit a final report to the same committees not later than 180 days after completion of the pilot program.

### **Subtitle B—Health Care Administration**

#### **Improvement of administration of Defense Health Agency and military medical treatment facilities (sec. 711)**

The committee recommends a provision that would amend section 1073c(a) of title 10, United States Code, to improve and enhance the administration of the Defense Health Agency and military medical treatment facilities (MTFs). Under this provision, the Defense Health Agency (DHA) would have the following additional authorities to: (1) Direct, control, and serve as the primary rater of the performance of commanders or directors of MTFs; (2) Direct and control any intermediary organizations between the Defense Health Agency and MTFs; (3) Determine the scope of medical care provided at each MTF to meet the military personnel readiness requirements of the senior military operational commander of the military installation; (4) Determine total workforce requirements at each MTF; (5) Direct joint manning at MTFs and intermediary organizations; (6) Establish training and skills sustainment venues for military medical personnel; (7) Address personnel staffing shortages at MTFs; and (8) Approve service nominations for commanders or directors of MTFs. The provision would also amend section 1073c(d)(2) of title 10, United States Code, to require the DHA Director to ensure that the DHA meets the military personnel readiness requirements of the senior military operational commanders of military installations.

In Conference Report 115–404, accompanying the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), the conferees expressed concerns with the Department of Defense’s original plan to implement section 702 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) and voiced a strong commitment to reform the organization and governance of the military health system. Even with this clear direction from the conferees, the Department has again failed to provide a credible, detailed plan to implement section 702. As a result, the committee believes that this provision would further clarify the intent of section 702 and lead to enhanced operational medical force readiness and total force readiness, improved access to care, improved quality of care, and a better experience of care that soldiers, sailors, airmen, and marines (and their families) deserve.

**Organizational framework of the military healthcare system to support medical requirements of the combatant commands (sec. 712)**

The committee recommends a provision that would require the Secretary of Defense, acting through the Director of the Defense Health Agency (Director), to commence implementation, not later than October 1, 2018, of an organizational framework of the military health system that: (1) Effectively implements chapter 55 of title 10, United States Code; (2) Maximizes interoperability; and (3) Fully integrates the medical capabilities of the Armed Forces to enhance joint military medical operations in support of combatant command requirements.

The provision would authorize the Director to conduct a phased implementation, in compliance with section 1073c of title 10, United States Code, of a new organizational framework with full implementation required not later than October 1, 2020. The provision would establish no more than three health readiness regions in the continental United States, and each region would be led by a commander or director appointed to a grade no higher than major general or rear admiral. Each military department would nominate qualified individuals to serve in those positions, and the Director would select those individuals to serve as health readiness regional commanders or directors under the authority, direction, and control of such Director.

Under this provision, the Director would establish a regional hub at a major military medical center in each region to provide complex, specialized medical services. Each regional hub would be geographically located to maximize medical support to combatant commands. The provision would authorize the Director to establish or maintain additional medical centers in locations with large beneficiary populations or locations that serve as the primary readiness platforms of the Armed Forces. In addition, this provision would authorize the Director to establish up to two health readiness regions outside the continental United States. The provision would prescribe certain additional duties and responsibilities of the Director related to readiness, operational medicine support, and beneficiary healthcare delivery.

Moreover, the provision would require the Secretary of Defense, through the service secretaries, to disestablish the medical departments of the Services, and any subordinate commands or organizations, not later than October 1, 2019, and to establish operational medical force readiness organizations in each service, led by the Services' Surgeons General. These organizations would have no command authority. Finally, the provision would prescribe the responsibilities of the Services' operational medical force readiness organizations.

In March 2018, the committee received the Department's third interim report, which described its most recent plan to implement section 702 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328). After careful review of this interim report, however, the committee remains frustrated with the Department's plan to reform the military health system. In the committee's view, the plan fails to maximize interoperability as it does not fully integrate the medical capabilities of the Services to

enhance joint medical operations. The plan maintains the Services' medical departments and establishes new, stove-piped service commands whose responsibilities would be to oversee medical force readiness and to provide administrative support to military medical personnel, a function that could otherwise be effectively provided by other units reporting directly to the Services' line commanders.

In addition, the plan would not fully eliminate duplicative activities carried out by the Defense Health Agency and the Services' medical departments. For example, the plan would reduce total medical headquarters personnel by only 165 full-time equivalent positions—out of 6,400 total positions—through 2023. Clearly, the plan demonstrates that the Services intend to maintain many, if not most, existing medical headquarters functions and current staffing levels while disregarding the call for innovation and efficiency included throughout the Department's National Defense Strategy.

To address these concerns and many others, this provision would thoughtfully prescribe a centralized organizational framework for the military health system that more clearly focuses the entire system on: (1) Improving total force readiness; (2) Meeting the actual medical requirements of combatant commanders; (3) Improving proficiency training for military medical providers in a fully integrated, joint training environment; and (4) Ensuring greater efficiencies in the delivery of healthcare services, while providing high quality, safe medical care and improving the experience of care for all beneficiaries.

#### **Streamlining of TRICARE Prime beneficiary referral process (sec. 713)**

The committee recommends a provision that would require the Secretary of Defense to streamline the process under section 1095f of title 10, United States Code, by which TRICARE Prime beneficiaries are referred to the civilian provider network for inpatient and outpatient care under the TRICARE program. The provision would prescribe certain objectives for the streamlined referral process and require implementation in calendar year 2019. Additionally, the provision would require the Secretary to conduct an annual evaluation of the referral process and make improvements to the process as a result of the annual evaluation.

Currently, TRICARE Prime beneficiaries must undergo an exhaustive 10-step process to obtain a referral for medical care in the civilian provider network. This burdensome referral process unnecessarily delays medical evaluation and treatment, frustrating beneficiaries and creating dissatisfaction with the TRICARE program. The committee believes that the Defense Health Agency must quickly re-engineer the referral process to eliminate inefficient and unnecessary steps to improve the experience of care for TRICARE Prime beneficiaries.

#### **Sharing of information with State prescription drug monitoring programs (sec. 714)**

The committee recommends a provision that would amend section 1074g of title 10, United States Code, to require the Secretary of Defense to establish and maintain a program comparable to pre-

scription drug monitoring programs operated by the States, including programs approved by the Secretary of Health and Human Services under section 3990 of the Public Health Service Act (42 U.S.C. 280g–3). This program would apply to designated controlled substance prescriptions under the Department of Defense’s pharmacy benefits program. Under this provision, the Secretary would establish appropriate procedures for bi-directional sharing of patient-specific information regarding prescriptions for designated controlled substances between the program and State prescription drug monitoring programs, including any program operated by a county, municipality, or other subdivision within that State, to prevent misuse or diversion of opioid medications and other designated controlled substances. The provision would also authorize the Secretary to treat the disclosure of patient-specific information as an authorized disclosure for purposes of the health privacy regulations promulgated under the Health Insurance Portability and Accountability Act of 1996 (Public Law 104–191).

**Improvement of reimbursement by Department of Defense of entities carrying out state vaccination programs in connection with vaccines provided to covered beneficiaries under the TRICARE program (sec. 715)**

The committee recommends a provision that would amend section 719(a) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328; 10 U.S.C. 1074g note) to require the Secretary of Defense to reimburse an entity carrying out a State vaccination program for making vaccinations available to TRICARE covered beneficiaries. The provision would also stipulate that subparagraph (B) of section 719 should not apply to amounts assessed by entities providing independent verification that the assessments of such entities are below the costs of the private sector in making vaccines available.

**Subtitle C—Reports and Other Matters**

**Extension of authority for Joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund (sec. 721)**

The committee recommends a provision that would extend the authority for the joint Department of Defense-Department of Veterans Affairs Demonstration Fund from September 30, 2019, to September 30, 2020.

**Increase in number of appointed members of the Henry M. Jackson Foundation for the Advancement of Military Medicine (sec. 722)**

The committee recommends a provision that would amend section 178(c)(1)(C) of title 10, United States Code, to increase the number of appointed members of the council of directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine from four to six members.

**Cessation of requirement for mental health assessment of members after redeployment from a contingency operation upon discharge or release from the Armed Forces (sec. 723)**

The committee recommends a provision that would amend section 1074m of title 10, United States Code, to eliminate the requirement to provide a mental health assessment (MHA) to a servicemember after redeployment if the individual has been discharged from military service. Under current law, there is no requirement to provide an MHA to a servicemember 90 to 180 days after redeployment if the individual has been discharged; however, the cessation of the requirement to provide an MHA after a member has been discharged does not currently apply to MHAs required at 180 days to 18 months after redeployment and 18 months to 30 months after redeployment.

**Pilot program on earning by special operations forces medics of credits towards a physician assistant degree (sec. 724)**

The committee recommends a provision that would require the Assistant Secretary of Defense for Health Affairs to conduct a pilot program, for a period not greater than 5 years, to assess the feasibility and advisability of partnerships between special operations forces and institutions of higher education, and health systems if determined appropriate by the Assistant Secretary, through which special operations forces medics earn credit towards a master's degree of physician assistant for military operational work and training. The provision would require the Secretary of Defense to submit an initial report, within 180 days of the date of the enactment of this Act, to the Committees on Armed Services of the Senate and the House of Representatives, that describes: (1) A comprehensive framework for the military education to be provided under the program; (2) Metrics to be used to assess the effectiveness of the program; and (3) Mechanisms to be used by the Department, medics, or both to cover the costs of education received by medics.

In addition, the Secretary of Defense would submit a final report, not later than 180 days after completion of the pilot program, to the same committees, which provides an: (1) Evaluation of the pilot program using the metrics of assessment set forth in the initial report; (2) Assessment of the utility of funding mechanisms as set forth in the initial report; (3) Assessment of the effects of the program on recruitment and retention of special operations forces medics; and (4) Assessment of the feasibility and advisability of extending any authorities for joint professional military education under chapter 107 of title 10, United States Code, to warrant officers or enlisted personnel.

**Pilot program on partnerships with civilian organizations for specialized medical training (sec. 725)**

The committee recommends a provision that would require the Secretary of Defense to conduct a pilot program, for a period of not more than 3 years, to assess the feasibility and advisability of establishing partnerships with public, private, and non-profit organizations and institutions to provide short-term specialized medical

training to advance the medical skills and capabilities of military medical providers. Prior to commencement of the pilot program, the Secretary would establish metrics to evaluate the effectiveness of the program. The provision would require the Secretary to submit an initial report to the Committees on Armed Services of the Senate and the House of Representatives 180 days prior to initiation of the pilot program that includes a description of the program, the metrics used to evaluate the program, and any other matters relating to the program that the Secretary considers appropriate. Not later than 180 days after the completion of the pilot program, the Secretary would submit a final report to the same committees that includes an assessment of the effectiveness of the program. The committee considers this provision to be an important element in helping military medical providers advance their skills and capabilities in specialties such as orthopedic surgery that would improve the medical readiness of the total force.

The budget request included \$32.5 billion in Defense Health Program, Operations and Maintenance. The amount authorized to be appropriated in Operations and Maintenance, line number 060, includes the following changes from the budget request.

[Changes in millions of dollars]

Specialized Medical Training Pilot Program ..... +2.5

**Registry of individuals exposed to per- and polyfluoroalkyl substances on military installations (sec. 726)**

The committee recommends a provision that would require the Secretary of Veterans Affairs to establish a registry for individuals who have been exposed to per- and polyfluoroalkyl substances.

**Inclusion of gambling disorder in health assessments for members of the Armed Forces and related research efforts (sec. 727)**

The committee recommends a provision that would require the Secretary of Defense to incorporate medical screening questions specific to gambling disorder into the annual periodic health assessment conducted by the Department of Defense for members of the Armed Forces. The provision would also require the Secretary to incorporate gambling disorder questions into ongoing research efforts, including by restoring such questions into health-related behavior surveys of Active-Duty and reserve component personnel. Finally, the provision would require the Secretary to submit a report to the congressional defense committees, within 2 years of the date of the enactment of this Act, which describes efforts made to comply with this provision and provides findings of assessments and surveys with respect to prevalence of gambling disorder among members of the Armed Forces.

**Comptroller General review of Defense Health Agency oversight of TRICARE managed care support contractors (sec. 728)**

The committee recommends a provision that would require the Comptroller General of the United States to submit to the congressional defense committees, not later than 180 days of the date of

the enactment of this Act, a report reviewing the Defense Health Agency's oversight of the transition of TRICARE managed care support contractors. The provision would require the Comptroller General to conduct subsequent reviews of any transition of managed care support contractors of the TRICARE program and to submit reports to the same committees.

### **Items of Special Interest**

#### **Critical gaps in military physician specialties**

The Government Accountability Office (GAO) published a report titled "Military Personnel: Additional Actions Needed to Address Gaps in Military Physician Specialties" (GAO-18-77) on February 28, 2018, which described the Department of Defense's (DOD) gaps in physician authorizations (funded positions) and end strengths (number of physicians on hand). The report discussed how DOD's approach to address physician specialty gaps "does not include targeted and coordinated strategies to address key physician shortages." Additionally, the GAO established that all of the Services' components (active and reserve) had several physician specialties at levels below 80 percent of authorized levels and that many of those gaps were in critically short wartime specialties, such as critical care/trauma medicine, aviation medicine, and cardiac/thoracic surgery.

Currently, the Services primarily rely on the Armed Forces Health Professions Scholarship Program (AFHPSP) and the Uniformed Services University of the Health Sciences (USUHS) to access physicians. While the Services "generally meet their AFHPSP and USUHS recruitment goals," they continually experience gaps in critical specialties because the Services do not "channel students into residencies for the specialties in most critical need." Moreover, the GAO concluded that most medical students met minimal qualifications for acceptance into the AFHPSP and the USUHS but the DOD does not consistently track data on its students, "potentially hindering opportunities to improve the quality of its accession programs." Finally, the GAO found that the USUHS has not determined the costs of educating its medical students, which may hinder "DOD's ability to understand its full funding needs for its primary accession programs."

The committee is concerned about the Department's failure to comprehensively address the long-standing gaps in critical military physician specialties across the Services. As a result, the committee directs the Secretary of Defense and the service secretaries to provide a report to the Committees on Armed Services of the Senate and the House of Representatives, by January 1, 2019, that provides a comprehensive plan addressing all of the recommendations in the GAO report. In addition, the plan should include the Department's recommendations for changes to its physician accession programs, which may be required to ensure recruitment and retention of highly qualified physicians to address gaps in critical wartime medical specialties.

**Emerging technologies to mitigate and prevent traumatic brain injury**

The committee applauds the Department of Defense for its ongoing efforts to develop mitigation/prevention strategies for traumatic brain injuries (TBI). These efforts include exploration of emerging technologies that show promise in greatly reducing the occurrence of TBI. The committee understands that Walter Reed National Military Medical Center has successfully tested various innovative technologies to prevent TBI. To the committee's knowledge, however, these efforts have not yet led to the rapid fielding of these new technologies in military training or combat environments.

Therefore, the committee strongly urges the Secretary of Defense to establish an inter-service work group to develop a joint strategy to identify material solutions to mitigate and prevent TBI. The committee believes that this strategy should include a detailed review of the recent findings from successful testing of emerging technologies, followed by development of a comprehensive plan for rapidly identifying, testing, and fielding new technologies to mitigate and prevent TBI.

**Expedited development and approval of medical products for emergency use on the battlefield**

The committee is aware that a top priority for the Department of Defense's Combat Casualty Care Research Program is to optimize survival and recovery from combat-related injuries by advancing and improving damage control resuscitation of traumatic hemorrhage, forward surgical and intensive critical care, casualty transport, and care for traumatic brain injury and other neurological trauma. Pathogen inactivation of blood products can facilitate the collection of blood in austere operating areas because it can eliminate the need for laboratory testing in such settings while still ensuring blood safety. To accomplish goals of optimizing survival and recovery, the Department needs to develop and transition to pathogen-inactivated blood products, including whole blood, platelets, plasma, and red blood cells that are ultimately authorized or approved for use under the Federal Food, Drug, and Cosmetic Act or the Public Health Service Act in treating U.S. military forces. The committee encourages the Defense Health Agency to use Congressionally Directed Peer-Reviewed Medical Research Program funding to expedite the development and approval of medical products for use on the battlefield.

**Explore feasibility of implementing a combat readiness assessment tool**

To ensure a more deployable, resilient force, the Services need a tool to validate the physical fitness of the warfighter and to aid in the determination of combat readiness. The committee is aware of technology using machine learning and force plate measurements that can help develop personalized, evidence-based training programs to prevent injuries in athletes. This technology could provide: (1) Accurate, actionable insights regarding the physical condition of each warfighter; and (2) A customized fitness program for each warfighter to help minimize injuries during combat. The committee encourages the Department of Defense to explore the feasi-

bility of using this technology to assess the physical fitness of the warfighter.

#### **Extended Care Health Option respite care services**

The committee remains concerned about limitations in the Department of Defense's respite care benefit under the Extended Care Health Option (ECHO) program. Congress established the ECHO program to substitute for State Medicaid Waiver Program services, which are often unavailable to highly mobile military families. The committee believes that the services provided by State Medicaid Waiver Programs should serve as the benchmark for ECHO-covered services. Therefore, the committee strongly encourages the Department to expand ECHO respite care services to align with the average number of respite hours provided by State Medicaid Waiver Programs.

#### **Health risk surveillance of servicemembers in the United States Special Operations Command**

The committee commends the efforts of the United States Special Operations Command to develop an information system to track the health status of Special Operations Forces personnel with the goal of proactively identifying, studying, and mitigating health risk. This effort is a cooperative endeavor involving the John P. Murtha Cancer Center at Walter Reed National Military Medical Center, the Office of the Assistant Secretary of Defense (Health Affairs), and the Oncology Research Information Exchange Network, a network of major academic centers that has developed a uniform protocol for long-term patient surveillance. The committee encourages the Assistant Secretary of Defense (Health Affairs), in coordination with the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, to continue assisting the United States Special Operations Command in adapting this protocol for use in addressing risk and improving the overall health of military populations.

#### **MHS GENESIS**

The committee recognizes the importance of implementing a modern electronic health record system that is interoperable between the Department of Defense (DOD) and Department of Veterans Affairs (VA). An interoperable system will ensure sharing of servicemembers' health records with private sector healthcare systems and individual providers and will ease servicemembers' transition to the VA healthcare system upon separation from military service.

On May 17, 2018, VA signed a contract with Cerner Corporation officially ensuring deployment of DOD and VA electronic health records systems on the same operational platform in the future. This historic overhaul of the health record systems of the two largest government agencies requires transparency, accountability, and oversight. To ensure efficient and responsible implementation, the Secretary of Defense shall use existing and future inter-agency governance structures and collaboration between VA and DOD health record program offices to make certain a continued commitment to full DOD-VA interoperability and to share lessons learned and

best practices associated with the deployment and sustainment of MHS GENESIS.

#### **Mild traumatic brain injury screening tests**

The committee remains concerned that servicemembers who have suffered head injuries resulting in concussions or mild traumatic brain injuries (mTBI) may not be receiving the optimal level of available screening. Concussions can result in a prolonged recovery period with individuals reporting persistent symptoms over long periods of time. Individuals exposed to repetitive concussive events, especially those lacking early and accurate screening, are at high risk for long-term negative consequences to brain health, including the development of chronic neuro-degenerative disease. The committee is aware of approaches to screening for concussions and mTBI that assess rapid eye movements. Professional, collegiate, and amateur sports leagues have widely adopted these screening techniques in concussion screening protocols. The committee encourages the Secretary of Defense to assess the feasibility of including eye movement screening tests in the existing mTBI protocols for injured servicemembers.

#### **Procurement of telehealth solutions and services**

The committee recognizes the growing importance of telehealth in delivering accessible, quality healthcare to military servicemembers and their families. The committee is concerned that the Department of Defense (DOD) has relied on limited competition awards for telehealth services and has not always implemented the most effective telehealth solutions. The committee expects the DOD to use commercial-off-the-shelf technology solutions and non-developmental items and to limit excessively restrictive specification standards that may restrict or eliminate fair and open competition to provide the most effective telehealth services available.

#### **Prostate cancer incidence among Active-Duty servicemembers**

The committee recognizes that prostate cancer is the most prevalent cancer in men and the second leading cause of cancer mortality. In men younger than age 65, the prostate cancer mortality rate for African-Americans is 3.1 times greater than in Caucasians. In Americans age 65 and older, the mortality rate for African-American males is 2.3 times greater than Caucasians. More research is needed to better understand the incidence of prostate cancer rates by race among Active-Duty servicemembers, as well as any existing disparities in the diagnosis and treatment of prostate cancer in this population.

Therefore, the committee directs the Secretary of Defense to evaluate and provide a report to the Committees on Armed Services of the Senate and House of Representatives within 180 days that: (1) Examines the incidence of prostate cancer by race among Active-Duty servicemembers, including information detailing disparities in the diagnosis and treatment of prostate cancer with a focus on African-American men; and (2) Describes a plan for ad-

addressing any disparities and expanding access to diagnosis and treatment options for Active-Duty servicemembers.

#### **Rapid cerebral therapeutic hypothermia**

The committee is aware of the benefits of therapeutic hypothermia for traumatic brain injury, as well as its applications for various conditions including cardiac arrest, severe blood loss due to combat injury, and heat stroke. Recent evidence indicates that rapidly applied brain cooling can reduce or prevent brain damage even in cases of mild injury, such as concussion. The current evidence-based recommendation is to initiate therapeutic hypothermia as soon as possible, as brain damage can occur immediately after an incident. The committee encourages the Department to explore non-invasive, lightweight devices that rapidly initiate localized cerebral cooling at the point of the injury.

#### **Regenerative medicine research and development**

The Armed Forces Institute of Regenerative Medicine (AFIRM) delivers new technologies that will lead to functional and aesthetic recovery from severe injuries incurred in military service. AFIRM has advanced the development of restorative therapies for battlefield trauma, and this important work has led to 18 clinical trials with 3 trials already completed. Many technical challenges remain, however, before the Department of Defense (DOD) can realize the full potential of regenerative medicine in restoring the health and performance of wounded warfighters.

The committee is aware of the many emerging breakthrough treatments for severely wounded servicemembers that have resulted from AFIRM's public-private consortium approach to regenerative medicine research and development. The committee encourages the DOD to sustain the pace of scientific advances and military-relevant technology development in regenerative medicine through another multiyear public-private consortium modeled on AFIRM's two previous research and development consortium efforts.

#### **TRICARE access study**

Not later than 180 days from the date of the enactment of this Act, the Secretary of Defense, in coordination with the Secretary of Health and Human Services and the Commissioner of the Social Security Administration, shall submit to the Committees on Armed Services of the Senate and the House of Representatives, the Committee on Finance of the Senate, and the Committee on Ways and Means of the House of Representatives a report on the number of individuals who: (1) Are retired from the Armed Forces under chapter 61 of title 10, United States Code; (2) Are entitled to hospital insurance benefits under part B of title XVIII of the Social Security Act pursuant to receiving benefits for 24 months as described in subparagraph (A) or (C) of section 226(b)(2) of such Act (42 U.S.C. 426(b)(2)); and (3) Because of such entitlement, are no longer enrolled in TRICARE Prime or TRICARE Select (as those terms are defined in section 1072 of title 10, United States Code) under chapter 55 of title 10, United States Code.



## **TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS**

### **Subtitle A—Acquisition Policy and Management**

#### **Permanent Supply Chain Risk Management Authority (sec. 801)**

The committee recommends a provision that would permanently extend the authority provided in section 806 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111–383) regarding the management of supply chain risk and would clarify the Secretary of Defense’s ability to make determinations under the authority to apply throughout the Department of Defense.

#### **Commercially available market research (sec. 802)**

The committee recommends a provision that would amend section 2431a of title 10, United States Code, to define the market research requirement of major defense acquisition program acquisition strategies. This provision is intended to improve the Department of Defense’s capacity to conduct market research by diversifying the sources and methods used.

The committee notes that a growing share of the Department’s spending is on information technology products and services and believes robust market research is critical to acquisition planning. The committee believes that sufficient attention is not being given to market research and is concerned that the Department’s sources of data for market research are limited and lack diversity.

The committee therefore encourages the Department’s contracting officers to use commercially available detailed third-party market research, which should include any disclosures of a third-party’s interests and which should be considered by contracting officers in the context of all available data sources, to ensure that they have the best and most complete information available in developing and executing their acquisition strategies.

#### **Comptroller General assessment on acquisition programs and related initiatives (sec. 803)**

The committee recommends a provision that would amend chapter 131 of title 10, United States Code, to establish an annual assessment by the Comptroller General of the United States of Department of Defense acquisition programs and initiatives.

The committee notes that the Comptroller General’s annual assessment of selected weapons programs has been a highly valued product supporting the defense committees’ oversight for over 15 years. The Comptroller General’s reviews over the past decade on

major automated information systems, and defense business systems have similarly facilitated such oversight.

The committee notes with concern that the Department of Defense's warfighting, business, and enterprise capabilities are increasingly reliant on or driven by software and information technology. The Department of Defense is behind other Federal agencies and industry in implementing best practices for acquisition of software and information technology capabilities, to include agile and incremental development methods along with associated training, tools, and infrastructure.

The committee believes that, given the role of software and information technology in acquisition programs and initiatives across the Department both to conduct its missions as well as to balance its books, the Comptroller General's assessments must continue to keep pace.

Further, the committee notes that recent years have seen the most significant reform of the Department's acquisition function since the Weapon Systems Acquisition Reform Act of 2009 (Public Law 111-23), to include expansion of acquisition authorities, organizational realignments, delegation of acquisition execution to the Services, and rapid acquisition and prototyping authorities and offices.

The committee notes that, in past work on weapons systems, the Government Accountability Office (GAO) has developed criteria for analysis and oversight over programs. The committee expects that similar work from other areas within the organization can lead to similar methodologies for software and alternative acquisition pathways. Accordingly, this provision directs the Comptroller General to consolidate separate reporting on these initiatives, leveraging assessment criteria from across the GAO and outside experts, in order to provide a cohesive analysis that recognizes the complexity of the acquisition system. The provision also repeals an obsolete GAO reporting requirement.

### **Subtitle B—Amendments to General Contracting Authorities, Procedures, and Limitations**

#### **Department of Defense contracting dispute matters (sec. 811)**

The committee recommends a provision that would require the Secretary of Defense to carry out a study of the frequency and effects of bid protests involving the same Department of Defense contract award or proposed award that have been filed at both the Government Accountability Office and the Court of Federal Claims, and establish a data collection system to better track and analyze bid protest trends in the future.

The committee notes that the Rand study on the bid protest process ("Assessing Bid Protest of U.S. Department of Defense Procurements") mandated by the Fiscal Year 2017 National Defense Authorization Act (Public Law 114-328) recommended that policymakers and Department of Defense leadership should "consider implementing an expedited process for adjudicating bid protests of procurement contracts with values under \$0.1 million." The committee believes that this type of expedited process, akin to a traffic

court, would help resolve smaller and generally simpler cases commensurate with their value while preserving the right to an independent protest.

**Continuation of technical data rights during challenges (sec. 812)**

The committee recommends a provision that would amend section 2321(i) of title 10, United States Code, to clarify that the government may continue to exercise rights in technical data and non-commercial computer software during the course of a challenge with an incumbent contractor under section 2321(d) of title 10, United States Code, or under procedures established by the Department of Defense, to meet Department of Defense mission requirements and readiness needs during the course of the challenge.

**Increased micro-purchase threshold (sec. 813)**

The committee recommends a provision that would amend section 1902(a)(1) of title 41, United States Code, to align the micro-purchase threshold for the Department of Defense to the micro-purchase threshold for all government agencies at \$10,000.

**Modification of limitations on single source task or delivery order contracts (sec. 814)**

The committee recommends a provision that would amend section 2304a(d)(3)(A) of title 10, United States Code, to clarify the applicable standard for task or delivery order contract awards.

**Preliminary cost analysis requirement for exercise of multiyear contract authority (sec. 815)**

The committee recommends a provision that would amend section 2306b(i)(2)(B) of title 10, United States Code, to require that the preliminary findings of the agency head be supported by a preliminary cost analysis by the Director of Cost Assessment and Program Evaluation (CAPE).

Currently, section 2306b(i)(2)(B) of title 10, United States Code, requires preliminary findings of the agency head to be made after the completion of a cost analysis performed by the Director of CAPE.

The intent of this provision is to streamline the multiyear procurement contract legislative proposal process through the Director of CAPE and the agency head's conducting cost analysis simultaneously, rather than sequentially, to enable timely submission and ample consideration of such legislative proposals by the congressional defense committees.

**Inclusion of best available information regarding past performance of subcontractors and joint venture partners (sec. 816)**

The committee recommends a provision that would require the Secretary of Defense, in consultation with the Federal Acquisition Regulatory Council and the Administrator for Federal Procurement Policy, within 180 days after the date of enactment of this Act, to develop policies for the Department of Defense (DOD) to ensure the best information regarding past performance of certain subcontrac-

tors and joint venture partners is available when awarding DOD contracts.

**Modification of criteria for waivers of requirement for certified cost and price data (sec. 817)**

The committee recommends a provision that would make a technical change to section 817 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314; 10 U.S.C 2306a note).

**Subcontracting price and approved purchasing systems (sec. 818)**

The committee recommends a provision that would amend section 893 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383) to clarify that, for Department of Defense contracts with contractors that have approved purchasing systems as defined by section 44.101 of the Federal Acquisition Regulations, a contracting officer must have a written approval from his or her program manager prior to withholding consent based solely on disagreement with the proposed subcontract price.

**Comptroller General of the United States report on progress payment financing of Department of Defense contracts (sec. 819)**

The committee recommends a provision that would require the Comptroller General of the United States to submit a report, no later than 180 days after the date of the enactment of this Act, to the congressional defense committees on the results of an analysis of the effects of current financing levels of defense contracts on defense contractors and Defense budgets.

**Authorization to limit foreign access to technology through contracts (sec. 820)**

The committee recommends a provision that would authorize the Under Secretary of Defense for Research and Engineering to include in the terms of any contract provisions that would limit access by select persons or organizations to sensitive technology, and authorize the potential forfeit of intellectual property rights if these terms were violated.

**Briefing requirement on services contracts (sec. 821)**

The committee recommends a provision that would require the Under Secretary of Defense for Acquisition and Sustainment to brief the congressional defense committees no later than 180 days after the date of enactment of this Act, and every 180 days thereafter, on the progress of Department of Defense efforts to meet the requirements of section 23239(b) of title 10, United States Code, including relevant information on the methodology and implementation plans for future compliance.

**Sense of Congress on awarding of contracts to responsible companies that primarily employ American workers and do not actively transfer American jobs to potential adversaries (sec. 822)**

The committee recommends a provision that would express the sense of Congress that the Department of Defense should award contracts to responsible companies that primarily employ United States workers or are partners in the national technology and industrial base and do not actively transfer United States jobs to potential adversaries.

**Subtitle C—Provisions Relating to Major Defense Acquisition Programs**

**Program cost, fielding, and performance goals in planning major acquisition programs (sec. 831)**

The committee recommends a provision that would amend section 2448a of title 10, United States Code, to clarify that the designated milestone decision authority is the individual responsible for ensuring the accomplishment of the stated goals for a major defense acquisition program.

**Implementation of recommendations of the Independent Study on Consideration of Sustainment in Weapons Systems Life Cycle (sec. 832)**

The committee recommends a provision that would direct the Secretary of Defense to implement certain recommendations from the Independent Study on Consideration of Sustainment in Weapon Systems Life Cycle, which was conducted as required by section 844 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328).

The report's findings highlight that the Department of Defense has not given proper consideration to sustainment issues during the development and acquisition process. In particular, the report found that specific issues related to technical data rights and intellectual property were not properly considered during development and acquisition for certain programs and types of programs. Furthermore, the report observed that once systems are in sustainment, the non-consideration of these issues limits the ability of the Department to effectively modernize systems.

The committee believes that it is critically important to consider the findings and recommendations of this report.

**Pilot program to accelerate major weapons system programs (sec. 833)**

The committee recommends a provision that would establish a pilot program for the Secretary of Defense to reform and accelerate the contracting and pricing processes associated with major weapons systems programs through basing price reasonableness determinations on actual cost and pricing data for purchases of the same or similar products for the Department of Defense and reducing the cost and pricing data to be submitted in accordance with section 2306a of title 10, United States Code. This authority would expire on January 2, 2021.

The committee remains concerned with the continued challenges of cost overruns and long delays in acquiring major weapons system programs, many of which are caused by the overly bureaucratic way in which the Department of Defense does business. This provision would allow the Secretary of Defense to explore, through a pilot program, alternative ways to transform the Department's business model to solve the recurring problem of obtaining the correct information in a timely manner to expedite negotiations and deliver major weapons systems on time and within budget.

#### **Subtitle D—Provisions Relating to Acquisition Workforce**

##### **Permanent authority for demonstration projects relating to acquisition personnel management policies and procedures (sec. 841)**

The committee recommends a provision that would amend section 1762 of title 10, United States Code, to provide a permanent authority for personnel programs for employees in the Department of Defense civilian acquisition workforce and supporting personnel assigned to work directly with that workforce.

##### **Establishment of integrated review team on defense acquisition industry-government exchange (sec. 842)**

The committee recommends a provision that would direct the Chairman of the Defense Business Board to convene an integrated review team with members of the Defense Innovation Board and Defense Science Board to undertake a study on the exchange of defense industry personnel on term assignments within the Department. The study shall review: (1) Legal, ethical, and financial disclosure requirements for industry-government exchanges; (2) Existing or previous industry-government exchange programs; and (3) How the military departments address legal, ethical, and financial requirements for reserve component servicemembers who also maintain civilian employment in the defense industry. The team shall also produce recommendations to reduce barriers to industry-government exchange while ensuring financial and ethical integrity to protect the best interests of the Department.

The committee is aware of benefits garnered from the exchange of government employees with private industry and academia. However, the committee is aware that private sector employees may face barriers to participating in exchange programs with the Department of Defense. The committee believes that reciprocal exchanges provide value for both parties and encourage the flow of ideas and best practices.

##### **Exchange program for acquisition workforce employees (sec. 843)**

The committee recommends a provision that would require the Secretary of Defense to establish an exchange program that would temporarily assign civilian personnel working in the defense acquisition workforce, as defined by chapter 87 of title 10, United States Code, to a rotational program that would broaden the skills and expertise of participants and improve communication within and integration of the acquisition community.

The committee notes that section 1723 of title 10, United States Code, directs the Secretary of Defense to encourage the acquisition workforce's self-development and develop key work experiences for the acquisition workforce. The committee believes that the exchange program authorized in this provision would support the Department of Defense's ongoing efforts to enhance the acquisition workforce and improve acquisition outcomes.

### **Subtitle E—Provisions Relating to Commercial Items**

#### **Report on commercial item procurement reform (sec. 851)**

The committee recommends a provision that would direct the Assistant Secretary of Defense for Acquisition to conduct a review no later than March 1, 2020 of commercial item procurement reform, including recommendations by the independent panel created by Section 809 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) (Section 809 Panel) and provisions from recent National Defense Authorization Acts, and an analysis of the treatment of commercial services contracts as compared to commercial products. The Assistant Secretary shall provide an interim briefing on the methodology, goals, expected timeline for completion, and composition of the team conducting the review to the congressional defense committees no later than 180 days after the date of enactment of this Act.

The committee remains committed to pursuing ongoing reforms to commercial item procurement including through implementation of recommendations from the Section 809 Panel, among other entities. The committee is encouraged by the discussion of this important topic. However, the committee believes that Department of Defense leadership should be engaged in this discussion.

### **Subtitle F—Industrial Base Matters**

#### **National technology and industrial base application process (sec. 861)**

The committee recommends a provision that would establish a process for consideration of products to be included within the scope of the National Technology and Industrial Base. The committee believes that this process will allow decision makers to take a more strategic and comprehensive view and apply rigorous military requirements and economic-based analysis to the maintenance of robust and critical manufacturing capabilities for the Department of Defense.

#### **Report on defense electronics industrial base (sec. 862)**

The committee recommends a provision that would require a report by the Secretary of Defense, no later than January 31, 2019, that would examine the health of the defense electronics industrial base both domestically and within the national technology and industrial base. The committee remains concerned about the erosion of the domestic electronics supply chain, and encourages the Department to leverage existing resources, including the Executive Agent for Printed Circuit Board and Interconnect Technology, to ensure the availability and integrity of military electronics. To that

end, the committee supports broadening the Department's microelectronics initiatives to include the broader electronics industrial base in order to more comprehensively address gaps across the electronics supply chain.

**Support for defense manufacturing communities to support the defense industrial base (sec. 863)**

The committee recommends a provision that would provide the Secretary of Defense with authority to establish a program to make long-term investments in critical skills, infrastructure, research and development, and small business support in order to strengthen the national security innovation base, working in coordination with the defense manufacturing institutes.

**Subtitle G—Other Transactions**

**Change to notification requirement for other transactions (sec. 871)**

The committee recommends a provision that would clarify the congressional notification requirements for the use of Other Transactions.

**Data and policy on the use of other transactions (sec. 872)**

The committee recommends a provision that would direct the Under Secretary of Defense for Research and Engineering, the Under Secretary of Defense for Acquisition and Sustainment, and the Service Acquisition Executives of the military departments to collect data on the use of other transactions. The data should be stored in a manner that affords to the Assistant Secretary of Defense for Acquisition access at any time. The provision would also require the Assistant Secretary of Defense for Acquisition to analyze and leverage these data to update policy and guidance related to the use of other transactions.

**Subtitle H—Development and Acquisition of Software Intensive and Digital Products and Services**

**Clarifications regarding proprietary and technical data (sec. 881)**

The committee recommends a provision that would amend section 2321(f) of title 10, United States Code, to clarify the application of rights in technical data relating to major weapons systems. This provision would also amend section 2320 of title 10, United States Code, to clarify the application of licensing of appropriate intellectual property to support major weapons systems with regard to preferences for specially negotiated licenses.

The committee notes that both government and industry stakeholders continue to express concern over conflicting legal interpretations based on changes to rights in technical data made by section 813 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) and changes to rights in proprietary data made by section 835 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91). Therefore, the committee recommends a return to previous law and encourages the

Department of Defense to give clear guidance on the use of technical data and intellectual property in support of major weapons systems in conjunction with the recommendations provided by the government-industry advisory panel created by section 813 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92).

**Implementation of recommendations of the final report of the Defense Science Board Task Force on the Design and Acquisition of Software for Defense Systems (sec. 882)**

The committee recommends a provision that would direct the Secretary of Defense to implement certain recommendations of the Defense Science Board Task Force in their report on the Design and Acquisition of Software for Defense Systems.

The report contained seven recommendations on how to improve software acquisition in defense systems, to include the idea of the software factory, which underpins all other actions the Department of Defense might take in this area. The committee agrees with the report's emphasis on shifting the Department of Defense's treatment of software as solely a development activity to understanding that it is enduring and that, therefore, traditional models of hardware sustainment are not suited to the treatment of software in the acquisition process. Further recommendations pertained to iterative development, how to incorporate metrics in program management for software, risk reduction activities, the role of machine learning and autonomy in programs, and necessary competency within the acquisition workforce.

The committee believes that it is critically important to consider the findings and recommendations of this report.

**Implementation of pilot program to use agile or iterative development methods under section 873 of the National Defense Authorization Act for Fiscal Year 2018 (sec. 883)**

The committee recommends a provision that would provide additional direction to the Secretary of Defense in implementing the pilot program established under section 873 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

The committee is encouraged that the Department of Defense has established the pilot program as directed under section 873. However, the committee is disappointed that, despite being directed to identify four major software-intensive warfighting systems and between four to eight defense business systems, only one system has been identified for realignment.

Accordingly, the committee is selecting the systems and directing the Secretary of Defense to consider them as candidates in accordance with section 873.

The committee notes that some of the systems have recently begun transition to agile methods or have committed to doing so and, as such, their inclusion in the pilot program will allow the Department of Defense to use lessons learned for other systems that have not yet started realignment under the pilot program.

Elsewhere in this Act, the committee recommends funding reductions for several of the systems, with the expectation that cost savings will result from realignments under the pilot.

**Enabling and other activities of the Cloud Executive Steering Group (sec. 884)**

The committee recommends a provision that would direct the Cloud Executive Steering Group (CESG) to conduct certain activities to enable the Department of Defense (DOD) to continue its efforts to transition its data, systems, and applications to commercial cloud environments.

The committee notes the important role that the CESG has in supporting efforts to make optimal use of cloud computing technologies and services across the DOD. The committee encourages the active engagement of the members, to continue to ensure that cloud technologies are technically suitable, appropriately tested for security and reliability, and integrated with other DOD information technology efforts, so as to optimize effective and efficient procurement of such technologies and services and their performance in support of DOD missions.

The committee notes that the CESG's activities have been focused on the Joint Enterprise Defense Infrastructure initiative and that much attention has been paid to whether the DOD will make a single award or multiple awards following the competition for this contract for commercial cloud services. The committee is concerned that this focus has displaced necessary attention that would otherwise be paid to key enablers and preconditions for commercial cloud services, such as establishing modern commercial networks and conducting workload analysis.

The committee emphasizes the importance, to the DOD's cloud transition and enterprise efficiency goals, of modernizing networks by adopting advanced commercial capabilities. Network modernization is essential for cybersecurity, supporting service-level agreements for cloud services, ensuring efficient cloud access, and consolidating networks.

The committee notes that workload and migration analysis are critical to understanding feasibility and costs associated with the use of commercial cloud services. Workload analysis will reveal that some workloads performed by the DOD's systems and applications face significant barriers to migration due to technical, intellectual property, and data rights issues whose scope and implications are not yet understood. Such barriers have the potential to fundamentally limit the potential utility of commercial cloud services to the Department.

Further, the committee believes that such enabling activities must inform the Department's decision as to whether a single or multiple award is in the best interest of the government, as is required under federal acquisition regulation.

**Subtitle I—Other Matters****Prohibition on certain telecommunications services or equipment (sec. 891)**

The committee recommends a provision that would prohibit the Secretary of Defense's procurement of telecommunications equipment or services from Huawei Technologies Company or ZTE Corporation, any subsidiary or affiliate of such entities, or any entity controlled by the government of the People's Republic of China. The provision would also prohibit entry into a contract with any entity that uses equipment, as a critical component of any system, from Huawei Technologies Company, the ZTE Corporation, any subsidiary or affiliate of such entities, or any entity controlled by the government of the People's Republic of China.

**Limitation on use of funds pending submittal of report on Army Marketing and Advertising Program (sec. 892)**

The committee recommends a provision that would require the Secretary of the Army to submit a report on the recommendations contained in the Army Audit Agency of the Army's Marketing and Advertising Program. The report would include: (1) Mitigation and oversight measures to improve contract management; (2) The establishment of a review process to evaluate the effectiveness of marketing efforts; (3) The increase of acquisition and marketing experience within the Army Marketing and Research Group (AMRG); (4) An analysis of the workforces within AMRG; (5) The establishment of an Army Marketing and Advisory Board; and (6) The status on the implementation of new contracting practices recommended by the Army Audit Agency.

Additionally, the provision would prohibit the Secretary of the Army from obligating 50 percent of funds available for the AMRG in fiscal year 2019 until the report is submitted to the Committees on Armed Services of the Senate and House of Representatives.

**Permanent SBIR and STTR authority for the Department of Defense (sec. 893)**

The committee recommends a provision that would amend section 638 of title 15, United States Code, to provide a permanent authority for the Small Business Innovation Research program (SBIR) and the Small Business Technology Transfer program (STTR) in the Department of Defense.

**Procurement of telecommunications supplies for experimental purposes (sec. 894)**

The committee recommends a provision that would amend section 2373 of title 10, United States Code, to authorize the Secretary of Defense and the service secretaries to buy telecommunications supplies for experimental or test purposes.

**Access by developmental and operational testing activities to data regarding modeling and simulation activity (sec. 895)**

The committee recommends a provision that would ensure the Director, Operational Test and Evaluation, and other develop-

mental testing organizations be given access to all data associated with certain modeling and simulation activities supporting the acquisition of military capabilities.

### **Items of Special Interest**

#### **Analysis of technical and security issues in Department of Defense business systems**

The committee notes that the Department of Defense (DOD) faces many challenges in maintaining modern business systems to support critical defense missions and activities. The committee further notes that Secretary Mattis has made Defense business reform a key tenet of his management agenda. The committee is concerned that there may be real or perceived technical or security issues associated with moving away from large enterprise scale business systems and moving to smaller systems, including those that can better leverage commercial or government cloud computing services.

Therefore, the committee directs the Secretary of Defense to initiate an independent technical analysis of technical and security barriers to incorporating more modern information technology in business systems. The analysis should document case studies and lessons learned from government applications that already have used and operated with modern information technology development practices, standards, and services, as well as to determine the feasibility of using these practices, standards, and services for new capabilities or new starts for DOD business systems. The committee notes that, to optimize both cost and performance of these systems, experts have identified attributes for system suitability and quality, including changeability, stability, scalability, testability, effectiveness, security, documentation, developer base, and ease of installation. The committee believes that analysis of DOD's ability to produce systems with these kinds of attributes should be a key element of this analytic effort. The committee directs that this analysis should be delivered to the congressional defense committees no later than 1 year after the date of enactment of this Act.

#### **Assessment of Superior Supplier Incentive Programs**

The committee observes that the Department of Defense has undertaken various efforts to identify and reward high performing contractors, to include a Preferred Supplier Program and the recent direction to the Military Departments to implement Superior Supplier Incentive Programs. Not later than March 1, 2019, the committee directs the Under Secretary of Defense for Acquisition and Sustainment, in consultation with the Service Acquisition Executives of the military departments, to assess the implementation of such programs in achieving their original objectives.

#### **Incorporation of agile methods for testing in prototyping and streamlined fielding initiatives**

The committee notes the Department of Defense has taken seriously the acceleration of development and deployment of capabilities to the warfighter, which the committee believes are needed to

keep up with rapidly changing technologies and threats. The committee is encouraged that such efforts are drawing inspiration from the successful private sector use of agile acquisition and other iterative development methods that are connecting development and operations, often referred to as “DevOps,” especially for software systems.

One key tenet of these successful programs is the ability to deliver functioning, viable products to market so as to satisfy the needs of customers, whether they are commercial or military. This ability is based on the robust and practically continuous testing of systems as part of development, so as to discover and address technical and operational issues within the development cycle and with minimal cost.

The committee is concerned that an emphasis on rapid fielding without such explicit consideration of testing may result in deployment of systems that are not effective, secure, scalable, or interoperable and that the Department of Defense’s efforts to date have not yet included appropriate mechanisms to involve the testing community. The committee directs the Director, Operational Test and Evaluation, Under Secretary of Defense for Acquisition and Sustainment, and Under Secretary of Defense for Research and Engineering to jointly ensure that policies, procedures, and guidance reflect early involvement and integration of the test community into these accelerated development and fielding efforts, including mechanisms to make test and evaluation resources available as soon as initiatives are started in order to field rapidly.

The committee directs that this activity be conducted in conjunction with the rapid capabilities office, the Services, the Strategic Capabilities Office, and organizations tasked with similar prototyping efforts.

#### **Master plan for organic industrial base infrastructure**

The committee notes the importance of the organic defense industrial base in restoring and maintaining readiness for the military services. The committee further notes that sequestration coupled with multiple years of continuing resolutions has required the Department to take risk in a multitude of mission essential areas to include facilities infrastructure. The committee is concerned that the Department does not have a facilities infrastructure master plan for its depots, air logistics centers, and fleet readiness centers similar to the congressionally mandated Navy Shipyard Infrastructure Optimization Plan as well as the Long-Range Facilities and Construction Planning at Army Ammunition Plants and Arsenals.

The committee notes that the 20-year plan the Navy has developed for its public shipyards improves not only its equipment and facilities, but also the overall layout and configuration of its facilities and equipment leading to reduced man days and cost. Furthermore, the Navy states that it will be able to conduct additional maintenance leading to higher readiness rates once projects are completed on a rolling basis. At this time, the committee believes that existing organic facilities may not be ideally designed, placed, sized, or configured to support the current work processes, leading to inefficiencies. The committee believes that such a plan for the other organic facilities would not only reduce costs and mainte-

nance backlog but lead to higher readiness rates across the services and provide a better strategy for future planning.

Accordingly, the committee directs the Secretary of the Army, Secretary of the Navy, and Secretary of the Air Force, in consultation with their respective service chiefs, to submit individual service reports by February 1, 2019, on an engineering master plan for the optimal placement and consolidation of facilities and major equipment to support depot level repair functions of its government-owned and government-operated facilities and an investment strategy to address the facilities, major equipment, and infrastructure requirements at organic facilities under the jurisdiction of the respective service. The report shall include, but not be limited to, the following elements: (1) A review of current and projected workload requirements to assess efficiencies in the use of existing facilities including consideration of new weapon system characteristics, obsolescence of facilities, siting of facilities and equipment, and various constrained process flows; (2) An analysis of life-cycle costs to repair and modernize existing mission-essential facilities versus the cost to consolidate functions into modern, right-sized waterfront facilities to meet current and programmed future mission requirements; (3) A master plan for each facility incorporating the results of a review of industrial processes, logistics streams and workload distribution; and (4) An updated investment strategy planned for each public facility, including timelines to complete the master plan for each facility, a list of projects and brief scopes of work, and cost estimates necessary to complete projects for mission essential facilities.

### **Serviceability and control of technical data**

The committee is concerned about issues presented by machine learning technology relating to U.S. government and vendor ownership, use rights, documentation, and transportability of data, algorithms, and derivative technical data, such as models and other outputs created in the performance of machine learning services under a contract or other agreement, excluding the vendor's pre-existing algorithm in its original state, prior to its evolution based on processing of the government's data and exposure to the government's business processes. The issue of ownership and use rights extends to the vendor's future sales and applications of algorithms and models that were matured and derived from government data, especially where applications involve national security. The Department of Defense has a strong interest in obtaining government purpose rights for machine learning technology developed through government processes with government money, especially when there are national security reasons for the government to protect this technical data for government use and for the government to track where and if it is being used outside of the government in the future.

The committee directs the Deputy Secretary of Defense to conduct a comprehensive assessment of these issues and develop policies and guidance for the Department. The committee urges the Deputy Secretary to use the Algorithmic Warfare Cross-Functional Team, the Joint Artificial Intelligence Center that the Department recently announced it would create, the Defense Innovation Board,

and the expertise of the Defense Science Board and the Defense Digital Service to assist in the development of policy and guidance.

The committee directs the Deputy Secretary to complete the assessment and provide a briefing to the congressional defense committees within 180 days of the date of enactment of this Act, and to notify the committees when policies and guidance are issued.

**Use of Federal Aviation Administration approval for Department of Defense commercial derivative aircraft**

The committee is aware that the Department of Defense (DOD) has long operated products that are identical to those in civil use, including aircraft, aircraft engines, and propellers. These commercial derivative products have been certified by the Federal Aviation Administration (FAA), which has an effective system for approving parts, repairs, and alterations. The FAA's existing certification process allows the DOD to maintain its commercial derivative fleet without duplicative review or approval. The committee believes leveraging existing FAA certifications can provide the DOD cost and schedule efficiencies that should be pursued to the greatest extent practicable.

Therefore, the committee urges the Department to prioritize the use of non-developmental and commercially available items with existing FAA certifications as long as the use of those products do not compromise safety or security requirements established by the Department of Defense.



## **TITLE IX—DEPARTMENT OF DEFENSE ORGANIZATION AND MANAGEMENT**

### **Subtitle A—Office of the Secretary of Defense and Related Matters**

#### **Powers and duties of the Under Secretary of Defense for Research and Engineering in connection with priority emerging technologies (sec. 901)**

The committee recommends a provision that would grant the Under Secretary of Defense for Research and Engineering (USD (R&E)) the authority to direct the military departments and other elements of the Department of Defense with regard to four priority emerging technologies—hypersonics, directed energy, space satellite architectures, and artificial intelligence. This authority will be limited to one year and require renewal by the relevant congressional defense committees.

The committee recognizes the central importance of the USD (R&E) for achieving the technological superiority referenced within the National Defense Strategy and chose these specific technologies based on their paramount importance to the future fight. The provision would include a limitation on this authority in order to ensure its usage is consistent with the committee's intent. The committee urges coordination between the USD (R&E) and the military departments, instead of the usage of this authority, as the first resort for decisions about the development of these technologies.

#### **Redesignation and modification of responsibilities of Under Secretary of Defense for Personnel and Readiness (sec. 902)**

The committee recommends a provision that would amend section 136 of title 10, United States Code, to redesignate the Under Secretary of Defense for Personnel and Readiness as the Under Secretary of Defense for Personnel. This provision would also make the Under Secretary of Defense for Personnel the Chief Human Capital Officer for the Department of Defense.

The committee notes that over half of the annual defense budget goes toward human capital in the form of military, civilian, and contracted personnel. Yet despite its importance, the Office of the Under Secretary of Defense for Personnel and Readiness continues to be subject to instability caused by rapid turnover of senior leaders and lack of a consistent mission. This committee continues to hear constant frustration from Department of Defense senior leaders that there is a great lack of strategic workforce planning within the Department, which results in there being no coherent consolidation of hiring policies and no guidance on pathways to expedite hiring, management, or movement of the Department's workforce

in order to assist the Department in getting its most valuable resources, its people, on board and in the right positions to best help with the rapidly evolving mission of the Department. The Under Secretary for Personnel should be the Chief Human Capital Officer and the responsible official on these issues vital to the success of the Defense workforce.

Additionally, while a senior civilian official in the Office of the Secretary of Defense must have responsibility for readiness policy and oversight, this Under Secretary is not in the optimal position to do so. The committee notes that neither the Under Secretary of Defense for Personnel and Readiness, nor any of that official's subordinate leaders has been sought to testify on readiness in the numerous hearings that the congressional defense committees have held in recent years in their prioritization of military readiness recovery. The committee believes that readiness is a strategic issue that is better addressed by civilian officials who have responsibility for defense strategy, plans, and force development. Elsewhere in this legislation, the committee recommends a provision that realigns responsibility for readiness within the Office of the Secretary of Defense to improve and enhance oversight of this critical issue. The committee expects the Secretary of Defense to determine what activities, such as training policies, force education, and language instruction, which are currently addressed as readiness issues but would be better addressed as personnel issues for which responsibility should be retained by this Under Secretary.

This provision would ensure that the Under Secretary of Defense for Personnel is clearly focused on his primary responsibility, managing the Department's human resources. Additionally, the Under Secretary of Defense for Personnel would be tasked with serving as the Department's Chief Human Capital Officer, responsible for setting workforce development strategy and aligning the Department's human resources policies, healthcare policies, and programs with the Department's mission, strategic goals, and performance outcomes. The committee expects that this role will not be delegated to a lower level.

Further, the committee notes that section 907 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-404) reduced the total number of authorized Assistant Secretaries of Defense from 14 to 13, and eliminated specific titles for all but three. This change in law allows the Secretary of Defense more discretion to make effective use of the Assistant Secretaries of Defense within the Department. The committee notes that the Assistant Secretary of Defense for Readiness, a position that since creation has not been filled by a Senate-confirmed nominee, is a position that may be best suited for another Under Secretariat in the Department. Alternatively, the Assistant Secretary position within the Personnel Under Secretariat should be repurposed to better serve the primary functions of that office by focusing on strategic workforce planning, eliminating egregious hiring lag times, and developing and implementing flexible workforce authorities to better enable the Department of Defense to recruit and retain the talent it needs for a complex mission.

**Modification of responsibilities of the Under Secretary of Defense for Policy (sec. 903)**

The committee recommends a provision that would modify the responsibilities of the Under Secretary of Defense for Policy to express clearly that the primary duties of this senior official are the development of defense strategy and the translation of that strategy into detailed policy guidance for force development, operational planning, defense posture, joint force assessment, and readiness.

The committee notes that the Office of the Under Secretary of Defense for Policy has become increasingly consumed by specific activities—such as interagency meetings, foreign travel, and regional issues—at the expense of higher priority functions, first among which is ensuring that the strategic and operational requirements for the joint force, both present and future, are sufficiently addressed and funded in the Department of Defense’s Planning, Programming, Budgeting, and Execution process. This is an indispensable role for which no other senior civilian below the Secretary and Deputy Secretary of Defense is responsible. In this way, it is the Under Secretary’s unique duty to advise and assist the Secretary and Deputy Secretary of Defense in developing detailed policy guidance to direct and assess the development of the joint force, the employment and posture of the force, and the associated readiness requirements to execute the priorities of the National Defense Strategy, while providing the Secretary and Deputy Secretary of Defense with high-quality advice, based on rigorous strategic assessments, to inform their decisions on how to allocate resources to shape the joint force.

The committee acknowledges that, to date, the statutory duties of the Under Secretary have been vaguely defined. The committee seeks to redress that oversight by clearly establishing in statute, through this provision, what it sees as the most important responsibilities of the Under Secretary and the criteria the committee will prioritize in evaluating the background, experience, and qualifications of nominees for this position in order to execute its advise and consent duties.

**Report on allocation of former responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics (sec. 904)**

The committee recommends a provision that would direct the Secretary of Defense to report on decisions taken as part of the reorganization of the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics to allocate the responsibilities that are referenced in United States Code.

**Assistant Secretary of Defense for Strategy, Plans, Assessments, Readiness, and Capabilities (sec. 905)**

The committee recommends a provision that would establish the duties and responsibilities of the Assistant Secretary of Defense for Strategy, Plans, Assessments, Readiness, and Capabilities effective as of February 1, 2019.

One of the committee’s highest priorities in recent years has been improving the ability of the Department of Defense to develop and implement strategy. The National Defense Authorization Act for

Fiscal Year 2017 (Public Law 114–328) replaced the Quadrennial Defense Review with a framework for a more focused, coherent, and prioritized National Defense Strategy. The committee applauds the Secretary of Defense’s efforts in crafting the National Defense Strategy, which clearly addresses our eroding military advantage, prioritizes the threats posed by great power competitors, and acknowledges that the current joint force must change to meet those threats.

However, the committee recognizes that the ultimate success of the National Defense Strategy will depend on implementation guided by strong civilian leadership in the Department of Defense determined to make the difficult choices that are required to align policies, authorities, organizations, requirements, and investments with the National Defense Strategy, informed by a realistic assessment of available resources.

The Office of the Under Secretary of Defense for Policy has long been responsible for developing strategy and providing associated policy guidance for force development, operational planning, and defense posture. However, the committee has grown concerned that these policy functions have atrophied over many years and do not always receive sufficient attention from senior policy leaders. One such function that has become particularly moribund is the performance of detailed joint force assessments at the campaign, operational, and mission levels that are essential for better defining the capability, posture, planning, and readiness requirements that are needed to execute the National Defense Strategy. This is a different function than that performed by the Director of Cost Assessment and Program Evaluation, which is largely focused more narrowly on evaluating service program and budget requests.

Similarly, the committee believes that responsibility for readiness policy and oversight is currently misaligned in the Office of the Secretary of Defense, where it is viewed as a personnel matter under the purview of the Under Secretary of Defense for Personnel and Readiness, rather than as a strategic matter, focused on the proverbial question of “ready for what?” and addressed together with related operational issues, such as force planning. The committee believes that these organizational problems help to explain why joint force readiness and modernization have both experienced mounting crises, despite sufficient warning of growing external threats and internal shortcomings.

In recommending this provision, the committee seeks to ensure that the Secretary and Deputy Secretary of Defense are better supported on matters of defense strategy, force planning, and readiness. This provision would align the critical functions necessary to exert strong civilian leadership in the development of defense strategy and its translation into detailed policy to guide investments in necessary capabilities, readiness, and posture for the future joint force. Many of these functions are currently assigned to the Assistant Secretary of Defense for Strategy, Plans, and Capabilities in the Office of the Under Secretary of Defense for Policy. This provision would add to these functions strategic readiness responsibilities, a renewed emphasis on producing rigorous joint force assessments, and any additional policy and oversight duties for strategic

capabilities, as determined by the Under Secretary of Defense for Policy.

In reallocating responsibility for readiness in the Office of the Secretary of Defense, the committee is assigning to the Assistant Secretary responsibility for readiness as a strategic matter, currently lacking in the Office of the Secretary of Defense: namely, the production of detailed policy guidance to define the strategic, campaign, and operational objectives that the joint force must be ready to achieve, the implementation of the National Defense Strategy and associated campaign and contingency planning guidance, and the formulation of criteria that would be used to assess whether the joint force is, in fact, ready to achieve these results. As part of these duties, this Assistant Secretary would be responsible for conducting rigorous assessments of joint force performance through modeling and simulations, such as war games, and the observation of service and joint exercises.

The Assistant Secretary's unique responsibility in matters of readiness is defining and assessing readiness "outcomes," not measuring or collating readiness "inputs." The committee believes that the latter function is of limited utility without the former and should be performed by other civilian officials in the Office of the Secretary of Defense. Many of those duties, such as training policies, force education, and language instruction, are more accurately viewed as personnel matters and should be handled as such. Similarly, the committee believes that the Assistant Secretary should not be responsible for collating readiness reporting data and related functions that attempt to measure inputs that generate readiness. The committee views functions such as these as subordinate to the strategic matters of defining "readiness for what?" and expects the Secretary of Defense to realign these subordinate functions, as well as responsibility for them, based on the policy guidance that the Assistant Secretary produces on behalf of the Secretary to implement the National Defense Strategy.

The committee strongly believes that the responsibility for strategy, plans, assessments, readiness, and capabilities are best performed within the Office of the Under Secretary of Defense for Policy, considering the critical linkages they share with the regional and functional defense policy issues for which the Under Secretary is also responsible. However, if these so-called "outside the building" duties continue to take precedence over the so-called "inside the building" duties detailed in this provision, the committee will seriously reevaluate whether the functions being assigned to this Assistant Secretary of Defense should instead be removed from the Office of the Under Secretary of Defense for Policy and vested in a senior official who reports directly to the Secretary of Defense.

**Clarification of responsibilities and duties of the Chief Information Officer of the Department of Defense (sec. 906)**

The committee recommends a provision that would clarify the responsibilities and duties of the Chief Information Officer (CIO) of the Department of Defense by specifically delineating its authorities from those assigned to the Chief Management Officer (CMO)

in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

Section 910 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) designated the CMO as the CIO of the Department for the purposes of Defense business systems (10 U.S.C. 2222). The provision assigned the CMO the responsibility of administering the duties and responsibilities specified in sections 11315 and 11319 of title 40, section 3506(a)(2) of title 44, and section 2223(a) of title 10 for business systems and management. The provision also assigned the CMO with any responsibilities, duties, and powers relating to business systems or management that are exercisable by a chief information officer for the Department, other than those responsibilities, duties, and powers of a chief information officer that are vested in the Chief Information Officer of the Department of Defense by section 142 of title 10, United States Code.

**Specification of certain duties of the Defense Technical Information Center (sec. 907)**

The committee recommends a provision that would expand the duties of the Defense Technical Information Center to include execution of the Global Research Watch program and the development and maintenance of datasets and data repositories on research and engineering activities. The provision also requires a plan for the assumption of these duties.

**Limitation on termination of, and transfer of functions, responsibilities, and activities of, the Strategic Capabilities Office (sec. 908)**

The committee recommends a provision that would restrict the ability of the Secretary of Defense to terminate or transfer the functions of the Strategic Capabilities Office (SCO) until specific conditions are met and certified to the congressional defense committees. These conditions include a certification that the key functions of SCO will be preserved and a plan to replicate these functions elsewhere. The plan would also require a justification if the entity or transferred functions were to be managed outside of the Office of the Under Secretary of Defense for Research and Engineering.

**Technical corrections to Department of Defense Test Resource Management Center authority (sec. 909)**

The committee recommends a provision that would align the reporting relationship of the Test Resource Management Center to the Under Secretary of Defense for Research and Engineering, as a conforming change reflecting the disestablishment of the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.

**Subtitle B—Organization and Management of Other  
Department of Defense Offices and Elements**

**Modification of certain responsibilities of the Chairman of the Joint Chiefs of Staff relating to joint force concept development (sec. 921)**

The committee recommends a provision that would modify the role of the Chairman of the Joint Chiefs of Staff in developing joint capabilities. The provision would require the Chairman to expand concept development efforts to include short term challenges that could be addressed by joint concepts, as well as the long term issues the Joint Staff has traditionally considered.

The committee recognizes that not all capability gaps can, or should, be addressed by procurement or additional end-strength. Some challenges are best met through concept development efforts—especially joint concept development efforts where the capabilities of different Services are brought together to solve an operational challenge.

The committee also recommends the Joint Staff focus on identifying current capability gaps that prevent the joint force from achieving the objectives of the National Defense Strategy and determining which of these gaps could potentially be addressed by new concepts utilizing existing joint force capabilities. The Joint Staff should also ensure that these new joint concepts are tested, assessed, and, if appropriate, fielded to support the joint force.

**Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict review of United States Special Operations Command (sec. 922)**

The committee recommends a provision that would require the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC), in coordination with the Commander, U.S. Special Operations Command (SOCOM), to conduct a comprehensive review of SOCOM for the purpose of ensuring that the institutional and operational capabilities of special operations forces (SOF) are appropriate to counter future threats across the spectrum of conflict.

The committee notes that the National Defense Strategy re-orientes the way the Department of Defense is to prioritize its efforts in an increasingly complex and dangerous global security environment. A rising People's Republic of China and an increasingly belligerent Russian Federation are now the Department's top strategic priorities, while the Islamic Republic of Iran, the Democratic People's Republic of Korea, and countering violent extremism remain enduring lines of effort.

Over the last 16-plus years, SOCOM has largely focused its efforts on executing operations in support of the global countering violent extremism effort. As a result, SOCOM's organization, training, tactics, techniques, procedures, and the development and acquisition of capabilities has prioritized this mission set. While countering violent extremism will remain a persistent mission for SOF, the severity of the threat posed by China, Russia, and other adversarial states across the spectrum of conflict and the release

of the National Defense Strategy represent an inflection point for the future of SOF.

As such, the committee believes that the ASD SOLIC, consistent with his responsibilities under section 138 of title 10, United States Code, to “exercise authority, direction, and control of all special-operations peculiar administrative matters relating to the organization, training, and equipping of special operations forces,” should use the review required by this section as an opportunity to conduct a baseline assessment of the SOF enterprise and provide a strategic vision for the future of the force in order to ensure it remains a relevant and lethal component of the joint force to counter emerging and future threats facing the Nation.

**Qualifications for appointment as Deputy Chief Management Officer of a military department (sec. 923)**

The committee recommends a provision that would create qualification criteria for military department Deputy Chief Management Officers to include either significant experience in business operations and management in the public sector or significant experience managing an enterprise in the private sector.

The committee urges this change in accordance with the qualification requirements instituted for the Department of Defense Chief Management Officer and the Under Secretary of Defense (Comptroller) in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) and as part of the committee’s broader focus on ensuring attention to management expertise across the Department of Defense.

**Expansion of principal duties of Assistant Secretary of the Navy for Research, Development, and Acquisition (sec. 924)**

The committee recommends a provision that would expand principal duties of the Assistant Secretary of the Navy for Research, Development, and Acquisition to include sustainment, including maintenance, of weapons systems.

**Cross-functional teams in the Department of Defense (sec. 925)**

The committee recommends a provision that would require the Secretary of Defense to establish three cross-functional teams as directed in section 911 of the National Defense Authorization Act of Fiscal Year 2017 (Public Law 114–328). These teams will focus, respectively, on electronic warfare, personnel security, and the lethality of close-combat units. The provision also would require the Deputy Secretary of Defense to establish or designate an office as the Office of Primary Responsibility for implementing section 911.

Section 911 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) provided for the adoption of cross-functional teams (CFTs), an innovative management tool aimed at enabling the Secretary of Defense to better integrate across the functional silos of the Department of Defense to address the most complex challenges.

The intent of this legislation was to provide a powerful tool of small teams of experts reporting regularly and directly to the Sec-

retary that could directly shape creative solutions to pressing challenges the Department faces. CFTs have been thoroughly studied in academia, and are widely employed in the private sector, where they are used to integrate diverse capabilities in pursuit of solutions to a cross-cutting problem. Within the Department, these teams would bring together the expertise that resides in the functional organizations but would not be burdened by the parochial interests and agendas of these separate bureaucratic stovepipes. These CFTs would be able to avoid the consensus-seeking, lowest-common-denominator behavior that traditionally plagues the working groups, integrated product teams, and committees that the Department routinely forms to address cross-cutting issues. These CFTs would be uniquely capable of implementing the solutions to these issues, based on their ability to wield limited executive authority delegated directly by the Secretary to ensure compliance and effective execution of approved plans.

The committee's vision was that CFTs would foster jointness between the Office of the Secretary of Defense, the Joint Staff, the Services, and the combatant commands the way that the Goldwater-Nichols Act instilled jointness among the military Services and the combatant commands in the operational sphere. Achieving collaborative processes and culture and an integrated mission focus within the Department has been a goal of the committee since the time that the Goldwater-Nichols Act was conceived.

However, the committee is increasingly concerned that the Department is lagging in its implementation of the legislation. According to a review published by the Government Accountability Office (GAO) on February 28, 2018, titled "DOD Needs to Take Additional Actions to Promote Department-Wide Collaboration" (GAO-18-194), the Department has established only one CFT and has not released its guidance for CFTs or provided CFT training to appointees, among other elements required by statute to be completed last year. The Department has missed additional reporting and compliance deadlines also enumerated in the GAO report. Finally, the Department has not implemented recommendations from the study on best practices for CFTs that it commissioned earlier this year, including designating an office of primary responsibility or studying potential inclusion of service on CFTs as a condition for promotion.

The committee appreciates the magnitude of change that the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) mandated for the Department but continues to believe in the importance of promoting the cultural change enabled by CFTs across the Department. Only by integrating diverse expertise will the Department be able to meet its most pressing challenges. Therefore, the committee is directing that electronic warfare, personnel security, and close combat lethality be managed by CFTs, because of their high priority for the Department, and the complex, multi-functional nature of each program.

The committee remains concerned that electronic warfare is a warfighting area where the Nation's peer adversaries, such as China and Russia, are establishing asymmetric advantages over U.S. forces. The Defense Science Board identified numerous vulnerabilities in the May 2015 Electronic Warfare assessment,

and the Department attempted to address these in the June 2017 Department of Defense Electronic Warfare Strategy. However, the Department continues to approach the electronic warfare mission area and electromagnetic spectrum operations in an uncoordinated and insufficient manner that risks lagging further behind adversary efforts. A separate provision addresses the need for a designated senior official and this cross-functional team to address this growing challenge with a road-map that includes: a review of the vulnerabilities identified in the May 2015 Electronic Warfare assessment; an assessment of the capability of U.S. forces to conduct joint electromagnetic spectrum operations against near-peer adversaries; and a description of actions, performance metrics, and projected timelines for achieving key capabilities for electronic warfare and joint electromagnetic spectrum operations. The road-map would also include an analysis of any personnel, resourcing, capability, authority, or other gaps to be addressed in order to ensure effective implementation of the strategy across all relevant elements of the Department. The committee therefore believes the alignment of the electronic warfare mission is an ideal task for a CFT. The committee encourages the Secretary to select the most knowledgeable individuals from the Services, the Joint Staff, U.S. Strategic Command, and the Offices of the Under Secretaries for Policy, Acquisition, and Sustainment, Research and Engineering, and Personnel to work full-time on this CFT.

The committee is also committed to the success of the Department's personnel security mission and believes that it is another area ripe for CFT engagement. With the transfer of the background investigation function to the Department in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), the Department will need to conduct a review of existing policies and procedures for background investigations, and insider threat detection and prevention, in favor of new technologies like continuous evaluation. The only way for this transition to be successful is to have representation from all elements of the Department engaged and for this group to have significant leadership backing. Therefore, the committee recommends this as the second area for CFT attention, with special focus on the transfer of investigation responsibility, the integration of the National Background Investigation Services system into this process, and the resourcing of this responsibility within the Department. In addition, this team should be tasked to develop a plan to transition the remaining workload and resources of the National Background Investigations Bureau from the Office of Personnel Management to the Department of Defense.

The committee notes that the Secretary of Defense has created a "cross-functional task force for close combat lethality" that bears all of the features of a cross-functional team as defined in section 911 and in the Department's independent study of best practices on cross-functional teams. Given this congruity, the committee is concerned that the Secretary did not designate this task force as a cross-functional team for the purpose of responding to section 911 and believes that it should be recognized and managed as such. The committee does not believe that this designation requires any changes in the Task Force's organization, management, authorities,

mission, or activities, nor does it carry any implications for the duration of the Task Force.

With respect to the substantive work of this close combat lethality cross-functional team, the committee concurs in the Secretary's judgment that the proliferation of technology has eroded the comparative advantage of the United States' infantry close combat formations. The committee agrees also that the lethality and survivability of close combat formations is critical given that infantry formations have historically borne the majority of U.S. casualties in major conflicts despite comprising less than 5% of Department of Defense personnel. In light of the re-emergence of great power competition, it is appropriate for the Secretary to devote special attention to investments and reforms in infantry squad-level formations, including in personnel policies, training methods, human performance, and equipment. The committee is encouraged by the initial impact and workings of the CFT.

The committee understands that the Secretary's CFT is developing the concept of the infantry as an exceptionally managed career field as well as the increase in cohesion, stability and lethality resident in conceptualizing the "squad as a platform." The committee request that the Secretary notify the committee when the CFT is prepared to provide a briefing on the attendant policy, authorities and resources that would be required to realize these concepts.

**Deadline for completion of full implementation of requirements in connection with organization of the Department of Defense for management of special operations forces and special operations (sec. 926)**

The committee recommends a provision that would require full implementation of the reforms contained in section 922 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) not later than 90 days after enactment of this Act. The committee notes that this section included a number of reforms designed to empower the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC) to act as the "service secretary-like" civilian responsible for exercising "authority, direction and control of all special operations-peculiar administrative matters relating to the organization, training, and equipping of special operations forces (SOF)."

The committee further notes that section 922 established a new administrative chain of command to facilitate the exercise of these responsibilities that runs from Commander, U.S. Special Operations Command (SOCOM) through the ASD SOLIC to the Secretary of Defense, thereby mirroring the relationship between the Secretary of Defense and the service secretaries. This reform was, in part, intended to address the fact that the ASD SOLIC's organizational location within the Office of the Under Secretary of Defense for Policy (USD(P)) has resulted in the ASD SOLIC dedicating the preponderance of his time and resources to policy and operational issues at the expense of his "service secretary-like" responsibilities. The committee understands that the Department continues to consider options for implementing this administrative chain of command but reiterates its intent that the ASD SOLIC is

empowered to act independent of, but in coordination with, the USD(P) in matters related to the organization, training, and equipping of special operations forces. This administrative chain of command is not intended to impact the relationship between the ASD SOLIC and USD(P) on policy matters relating to the employment of special operations forces and related authorities.

The committee is concerned that, despite passage of Public Law 114–328 nearly 18 months ago, the implementation of the reforms contained in section 922 remain incomplete. According to a report required by section 1074 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), the Deputy Secretary of Defense directed the development of recommendations for implementation of these reforms, but no substantive actions have been taken since. Therefore, the committee directs the Secretary of Defense, beginning on July 1, 2018, and continuing on the first day of every month thereafter until full implementation of the ASD SOLIC reforms, to provide the congressional defense committees with monthly progress reports on specific actions taken to institutionalize the ASD SOLIC’s role in:

(1) SOF programs and requirements, including SOCOM’s Strategic Planning Process; the Global Force Management process; the Joint Capabilities Integration and Development System; the military construction decision process; and the process for development of campaign and posture plans;

(2) SOF acquisition, technology, and logistics enterprise, including acquisition program management; science and technology program management; innovation; procurement; Services program management; logistics; materiel readiness; depot management; agile/specialized acquisition management; and supporting activities;

(3) The Department of Defense’s budgeting processes for special operations;

(4) SOF personnel and readiness, including management of military and civilian personnel; readiness reporting; SOF-peculiar initiatives (e.g., training education, warrior care); awards and decorations; and casualty notifications;

(5) SOF special access programs, including programming and budgeting, acquisition, security, and oversight; and

(6) Other matters including, but not limited to, legislative affairs, public affairs, general counsel, and inspector general-type functions.

The committee further directs that the required reports provide benchmarks for achieving full implementation of the ASD SOLIC reforms in each of the six areas described above and an assessment of when each benchmark will be achieved. Elsewhere in this Act, the committee recommends a provision related to civilian staffing of the ASD SOLIC Secretariat for Special Operations.

**Subtitle C—Organization and Management of the  
Department of Defense Generally**

**Limitation on availability of funds for major headquarters  
activities of the Department of Defense (sec. 931)**

The committee recommends a provision that would amend chapter 2 of title 10, United States Code, to limit the amount of funds available for major headquarters activities (MHA) within the Department of Defense (DOD). Beginning in fiscal year 2020, the provision would prohibit the DOD from spending more than 1.6 percent of the 10-year average of the DOD budget on MHA.

Of the funds authorized to be spent on MHA, no more than 0.4 percent of the Department's 10-year budget average shall be available for Office of the Secretary of Defense MHA entities. Additionally, within the total funds available for MHA, 1 percent of the 10-year average of each military department budget shall be available for the MHA requirements of each military department concerned.

Any remaining funds available for MHA requirements may be distributed to any MHA organization within the Department of Defense, with the exception of MHA organizations within the Office of the Secretary of Defense. Combatant command MHA requirements will be funded out of these remaining resources.

The committee notes that this provision aligns the DOD with private sector best management practices. Managing overhead and headquarters through realistic budgetary percentage targets allows for appropriate flexibility and also ensures a predictable distribution of resources to various MHA entities. The budget percentage limitations included in this provision were deliberately selected to achieve two primary objectives. First, these percentages achieve the desired MHA reductions originally installed by section 346 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92). Second, the selected percentages are realistic targets based on historical MHA spending levels. A 10-year average of budget levels was utilized to insulate the Department from rapid year-to-year swings in funding.

**Responsibility for policy on civilian casualty matters (sec.  
932)**

The committee recommends a provision that would require the Under Secretary of Defense for Policy to designate a senior civilian official of the Department of Defense at the level of Assistant Secretary of Defense or above to develop, coordinate, and oversee compliance with the policy of the Department relating to civilian casualties resulting from U.S. military operations. Additionally, the provision would require the senior civilian official so designated to submit to the congressional defense committees a report that describes the policies developed under this section and the efforts of the Department to implement those policies.

**Additional matters in connection with background and security  
investigations for Department of Defense personnel (sec. 933)**

The committee recommends a provision that would require the Department of Defense to report on the number of denials or rev-

ocations of a security clearance that occurred separately from a periodic reinvestigation. The provision also includes a sense of Congress that adjudication decisions from personnel security investigations should be communicated in a transparent manner to ensure public trust.

**Program of expedited security clearances for mission-critical positions (sec. 934)**

The committee recommends a provision that would require the Director of National Intelligence to establish within 90 days of enactment of this Act a program for mission-critical positions, fulfilled by either government or contract employees, to complete the processing of an application for a clearance within a designated timeline.

**Information sharing program for positions of trust (sec. 935)**

The committee recommends a provision that requires the Director of National Intelligence to establish within 90 days of enactment of this Act a program to share information, to include derogatory and suitability information, with appropriate safeguards for privacy, between and among government agencies and industry partners regarding individuals applying for and in positions of trust.

**Report on clearance in person concept (sec. 936)**

The committee recommends a provision that requires the Director of National Intelligence to provide, within 90 days of enactment of this Act, a report on the requirements, feasibility, and advisability of implementing a “clearance in person” concept for maintaining access to classified information.

**Strategic Defense Fellows Program (sec. 937)**

The committee recommends a provision that would require the Secretary of Defense to establish, within 1 year of the date of the enactment of this Act, the Strategic Defense Fellows Program within the Department of Defense (DOD) to provide leadership development and the commencement of a career track toward senior leadership in the Department. The provision would prescribe eligibility, application, selection, assignment, term, and certain pay and benefit requirements for prospective fellows. Additionally, the provision would require the Secretary to ensure fellows receive opportunities and support appropriate for commencement of a career track within the DOD that could lead to a future position of senior leadership within the Department.

The budget request included \$1.5 billion in the Operation and Maintenance, Defense-wide (OMDW) for the Office of the Secretary of Defense (SAG 4GTN). The amount authorized to be appropriated for OMDW includes the following changes from the budget request.

[Changes in millions of dollars]

Strategic Defense Fellows Program .....	+10.0
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**Subtitle D—Other Matters****Analysis of Department of Defense business management and operations datasets to promote savings and efficiencies (sec. 941)**

The committee recommends a provision that would direct the Chief Management Officer to develop a policy on the analysis of Department of Defense datasets on business management and operations and to pilot three to five of these previously non-public datasets under that policy. These datasets would come from business operations-related systems.

The committee believes that the Department of Defense should be seeking to effectively leverage analytic methods or techniques outside of the Federal Government in order to face its most pressing challenges. In discharging this project, the Secretary of Defense should exercise appropriate caution in excising any personal information or sensitive security information from public exposure.

**Research and development to advance capabilities of the Department of Defense in data integration and advanced analytics in connection with personnel security (sec. 942)**

The committee recommends a provision that would direct the Under Secretary of Defense for Intelligence to conduct research and development efforts on continuous evaluation and personnel security.

The committee recognizes that the Department of Defense (DOD), through the Defense Security Service, has been researching continuous evaluation technologies and approaches for some time. Though DOD is exploiting some commercial technologies, these efforts have largely built upon government developed tools from entities like the Defense Manpower Data Center and Defense Personnel and Security Research Center. These efforts have occurred under significant time pressure given the impending transfer of responsibilities for personnel security investigations from the National Background Investigation Bureau to DOD and have been rightly focused on creating minimally viable products that can quickly scale.

However, the committee urges DOD to direct some limited additional research and development resources toward this problem in order to leverage and incorporate leading-edge technologies that may exist only in the commercial sector. The committee appreciates the urgency surrounding this effort, but believes in the critical importance of going beyond a simple evolution of existing technology to instead seek a “step change” in capability that will radically improve the personnel security process. Access to these leading edge capabilities will be enhanced through collaboration with the Defense Digital Service and the Defense Innovation Board. The Director of National Intelligence, in the role of Security Executive Agent, should be involved in these efforts and made aware of changes to continuous evaluation or personnel security procedures proposed by DOD.

### **Items of Special Interest**

#### **Department of Defense personnel security resourcing plans and needs**

The committee directs the Under Secretary of Defense for Intelligence, in coordination with the Chief Management Officer, to submit a report on the resource and workforce requirements necessary for implementing section 925 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91). The committee seeks to understand, in particular, the investigative capacity needs that will be required to complete this mission. Accurate and reliable estimates of the current contract and government capabilities that can be tapped to execute these missions will become even more critical after these changes. The committee is concerned that the personnel security community has long lacked accurate estimates of capacity which has led to increased backlogs.

Moreover, as the Department ramps up its efforts in continuous evaluation and insider threat capabilities, the workforce needs and skills required to complete background investigations will shift. This shift may require increased capacity from functions outside of traditional security, like human resources. Therefore, the report should also include a proposal for the Department of Defense's path forward in order to fully tap both government and industry capacity given advances in technology. The committee further directs the Department to include within this report information on the use of 1099s for federal background investigations.

The committee directs the Under Secretary of Defense for Intelligence submit this report to the relevant congressional defense committees and intelligence committees not more than 180 days after enactment of this Act.

#### **Department of Defense security clearance responsibilities**

The committee understands that the administration has decided to transfer to the Department of Defense (DOD) the remaining responsibilities of the Office of Personnel Management's National Background Investigations Bureau for conducting background investigations for non-DOD Federal employees. Independent of this decision, the committee remains concerned by the backlog in background investigations and re-investigations which creates security risks for the government, harms the government's ability to recruit high-quality personnel, and wastes resources annually as employees are sidelined waiting for clearances. At the same time, the committee fully recognizes the necessity for a consistent, reliable, judicious, and thorough investigation and adjudication process.

Therefore, the committee directs the Secretary of Defense to present to the appropriate committees a plan for assuming all background investigation responsibilities for the federal government no later than 90 days after the enactment of this Act. The plan should explain how DOD will manage the transition while modernizing the investigation process and reducing the backlog. The plan should include an estimate of the time and resources required to eliminate the backlog and any additional authorities needed in order to carry out this mission.

**Deputy Assistant Secretary of Defense for the Arctic**

The committee notes the strategic importance of the Arctic continues to increase as the United States and other countries recognize the military significance of the Arctic's sea lanes, choke points, and its potential for power projection into multiple regions. The committee also recognizes that the Department of Defense's mission requirements in the Arctic are expected to grow, as increases in human and maritime activity bring heightened risk of maritime accidents, oil spills, illegal fishing, and harvesting of other natural resources in the exclusive economic zones of the United States and other potential threats and challenges to United States sovereignty.

The committee notes that the Russian Federation has aggressively focused on the development of Arctic capabilities and has made significant investments in military infrastructure in the Arctic. The committee further notes that Secretary of Defense James Mattis has stated, "The Arctic is key strategic terrain. . . Russia is taking aggressive steps to increase its presence there. . . I will prioritize the development of an integrated strategy for the Arctic. I believe that our interests and the security of the Arctic would benefit from increasing the focus of the Department of Defense on this region."

The committee remains concerned that the current Department of Defense jurisdiction over the Arctic region presents operational seams between three geographic combatant commands and two functional combatant commands: U.S. Northern Command, U.S. European Command, U.S. Pacific Command, U.S. Strategic Command, and U.S. Transportation Command, with U.S. European Command holding the primary responsibility for the major adversary in the region, U.S. Pacific Command retaining operational control of U.S. forces located in Alaska, and U.S. Northern Command assigned as the Department's advocate for Arctic capabilities. Exacerbating the operational seam is the fact that, within the Office of the Secretary of Defense, there is no single person directly responsible for the coordination of Arctic security issues. The committee is concerned that no one combatant command nor one single entity within the Office of the Secretary of Defense is tasked with operationalizing the Department of Defense's 2016 Arctic Strategy.

Therefore, the committee urges the Secretary of Defense to designate a Deputy Assistant Secretary of Defense with primary responsibilities for the Arctic Region, in order to coordinate the formation of Arctic defense policy with relevant Department of Defense entities. The Deputy Assistant Secretary of Defense for the Arctic Region would have the responsibilities of: advocating for United States national security interests in the Arctic region; mitigating operational seams between relevant geographic and functional combatant commands in order to improve unity of effort; identifying any capability and resource gaps in the Arctic region and formulating plans to mitigate these gaps; identifying the actions by foreign nations that increase the threat to United States interests in the Arctic region; formulating plans to mitigate these actions; and planning military-to-military cooperation with partner nations that have mutual security interests in the Arctic region. Not later than December 1, 2018, the committee directs the Sec-

retary to provide a report to the congressional defense committees on how the Department plans to delegate and address these responsibilities.

## TITLE X—GENERAL PROVISIONS

### Subtitle A—Financial Matters

#### **General transfer authority (sec. 1001)**

The committee recommends a provision that would allow the Secretary of Defense to transfer up to \$4.5 billion of fiscal year 2019 funds authorized in division A of this Act to unforeseen higher priority needs in accordance with normal reprogramming procedures. Transfers of funds between military personnel authorizations would not be counted toward the dollar limitation in this provision.

#### **Inclusion of funds for Air Force pass-through items in Defense-wide budget for the Department of Defense (sec. 1002)**

The committee recommends a provision that would require the Secretary of Defense to transfer Air Force pass-through budget items to the defense-wide budget for fiscal year 2020 and future budget requests.

Each year, a significant portion of the Air Force budget contains funds that are passed on to, and managed by, other organizations within the Department of Defense. This portion of the budget, called “pass-through,” cannot be altered or managed by the Air Force. It resides within the Air Force budget for the purposes of the President’s budget request and apportionment, but is then transferred out of the Service’s control. In fiscal year 2018, the Air Force pass-through budget amounted to approximately \$22.0 billion, or just less than half of the total Air Force procurement budget. The committee believes that the current Air Force pass-through budgeting process provides a misleading picture of the Air Force’s actual investment budget.

#### **Report on shift in requests for funds for Department of Defense activities from funds for overseas contingency operations to funds through the base budget (sec. 1003)**

The Department of Defense and the Office of Management and Budget (OMB) have both stated their intentions to shift funding in the Overseas Contingency Operations (OCO) accounts to base funding starting in fiscal year 2020. According to the OMB, the Department will be shifting \$53.0 billion of the \$73.0 billion of OCO funding to base in fiscal year 2020. The shift of OCO to base funding is an attempt by the Department and the OMB to move enduring costs associated with overseas contingencies back to the base budget. The committee supports a shift of OCO to base if there is a comparable increase in the overall base topline and if it is done in a responsible manner that does not put at risk future funding for key

programs, such as preferred munitions or the European Deterrence Initiative.

Therefore, the committee recommends a provision requiring the Under Secretary of Defense (Comptroller) to submit a report that outlines the changes to the OMB OCO criteria and lists the exact figure amounts by project or activity that are shifted from OCO to base funding for the fiscal year 2020 budget request.

**Ranking of auditability of financial statements of the organizations and elements of the Department of Defense (sec. 1004)**

The committee recommends a provision that would reinstate a reporting requirement that the Under Secretary of Defense (Comptroller) rank the military departments, Defense Agencies, and Field Activities in terms of audit progress.

**Transparency of accounting firms used to support Department of Defense audit (sec. 1005)**

The committee recommends a provision that would require the Secretary of Defense to mandate that any firm under contract or consideration to support the Department of Defense's (DOD) full financial statement audit provide a statement documenting any relevant disciplinary proceedings currently in progress involving that firm.

The committee notes that in order to complete the first full financial statement audit of DOD, the Department will be required to contract with accounting firms. However, the committee urges the Department to create policies on disclosure of any relevant proceedings that such firms are involved in, in order to ensure that the firms are best qualified and positioned to provide sound audit advice. The committee urges the Department to consider such results and to look for an unqualified peer review report when selecting a partner, in order to ensure effective counsel on quality control processes and audits.

**Subtitle B—Naval Vessels and Shipyards**

**Date of listing of vessels as battle force ships in the Naval Vessel Register and other fleet inventory measures (sec. 1011)**

The committee recommends a provision that would clarify the date of listing of vessels as battle force ships in the Naval Vessel Register and other fleet inventory measures.

**Annual reports on examination of Navy vessels (sec. 1012)**

The committee recommends a provision that would require an annual unclassified report from the President of the Board of Inspection and Survey that would provide an unclassified summary of inspection results for each fiscal year, including a narrative summary, vessels inspected, and material readiness trends.

**Limitation on duration of homeporting of certain vessels in foreign locations (sec. 1013)**

The committee recommends a provision that would limit the overseas homeport duration of certain ship classes to not more than 10 consecutive years.

The committee notes the Government Accountability Office (GAO) published a report on May 29, 2015, titled “Sustainable Plan and Comprehensive Assessment Needed to Mitigate Long-Term Risks to Ships Assigned to Overseas Homeports” (GAO-15-329), which concluded that “overseas-homeported ships have had lower material condition since 2012 and experienced a worsening trend in overall ship readiness when compared to U.S.-homeported ships” and “because the Navy expects [overseas-homeported] ships to be operationally available for the maximum amount of time, their intermediate and depot-level maintenance is instead executed through more frequent, shorter maintenance periods, or deferred until after the ship returns to a U.S. homeport, according to Navy officials.”

The committee further notes this GAO report states, “According to Navy officials, forward-deployed ships are typically homeported overseas for a period of 7 to 10 years before being replaced with a ship of the same class from the United States” and that the Chief of Naval Operations testified on January 18, 2018 before the Committee on Armed Services of the House of Representatives that his goal was overseas homeporting of not more than 8 years for a ship.

The committee understands the USS *Fitzgerald* and USS *John S. McCain* were initially homeported in Yokosuka, Japan in 2004 (13 years ago) and 1997 (20 years ago), respectively. The committee further understands other ships have exceeded the Navy’s overseas homeporting goals, including the USS *Curtis Wilber*, which has been homeported in Yokosuka since 1996 (21 years).

**Specific authorization requirement for nuclear refueling of aircraft carriers (sec. 1014)**

The committee recommends a provision that would require a specific authorization by statute before funds may be obligated or expended for the procurement of a naval nuclear reactor power unit or associated reactor components for the nuclear refueling of an aircraft carrier.

The committee notes that the procurement lead time for some nuclear components required to conduct a nuclear refueling precedes the authorization for the associated aircraft carrier refueling by several years.

Accordingly, in order to maintain appropriate oversight of program execution, the committee believes that the Department of Defense should obtain a specific authorization for such nuclear components.

**Dismantlement and disposal of nuclear-powered aircraft carriers (sec. 1015)**

The committee recommends a provision that would require a report be submitted to the congressional defense committees prior to awarding a contract for dismantlement and disposal of a nuclear-powered aircraft carrier or providing funding to a naval shipyard

for dismantlement and disposal of a nuclear-powered aircraft carrier.

The provision would also require additional information be provided on the dismantlement and disposal of nuclear-powered aircraft carriers with the materials submitted to the Congress by the Secretary of Defense in support of the budget of the President for each fiscal year.

The committee notes that in response to the Senate report accompanying S. 1519 (S. Rept. 115–125) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) the U.S. Government Accountability Office (GAO) has briefed the committee on the Navy’s considerations for the dismantlement and disposal of the ex-USS *Enterprise* nuclear-powered aircraft carrier.

The committee further notes GAO’s preliminary analysis indicates that the anticipated cost and schedule for dismantlement and disposal of the Navy’s nuclear-powered aircraft carriers are comparable to large Department of Defense (DOD) acquisition programs, which have structured oversight to support transparency and accountability; however, ship dismantlement and disposal has no specific reporting requirements under DOD or Navy policy.

The committee believes information provided on dismantlement and disposal as part of annual budget requests currently lacks sufficient detail to inform oversight of ship-specific activities. As the Navy has yet to dismantle and dispose of a nuclear-powered aircraft carrier, the committee further believes establishing formal requirements will set a precedent to enable sufficient oversight for these large-scale dismantlement and disposal efforts.

#### **National Defense Sealift Fund (sec. 1016)**

The committee recommends a provision that would amend section 2218 of title 10, United States Code, to increase the number of used vessels, from two to seven, that the Secretary of Defense is authorized to purchase as part of a program to recapitalize the surge sealift capability in the Ready Reserve Force component of the National Defense Reserve Fleet and the Military Sealift Command’s surge fleet. This proposal would also limit the time period during which such vessels could be purchased to fiscal years 2019 through 2030.

Based on the Navy’s fiscal year 2019 30-year shipbuilding plan, the committee understands that meeting the full sealift recapitalization requirement would entail procuring 26 used vessels through fiscal year 2031. The committee notes that authority to procure seven used vessels would be sufficient to meet sealift recapitalization requirements through fiscal year 2025. In order to maintain oversight of this program while allowing the Department to plan for the entire future years defense program, the committee believes that authority to procure such vessels should not exceed seven years.

#### **Limitation on use of funds for retirement of hospital ships (sec. 1017)**

The committee recommends a provision that would limit the use of funds for the purpose of retiring or preparing to retire a hospital ship.

The committee notes the Navy plans to decommission the USNS *Comfort* hospital ship in fiscal year 2021, which would decrease the Navy's hospital ship capacity by 50 percent, without a plan programmed in the future years defense program to replace the associated medical capability and capacity.

### **Subtitle C—Counterterrorism**

#### **Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States (sec. 1021)**

The committee recommends a provision that would extend until December 31, 2019, the prohibition on the use of funds provided to the Department of Defense to transfer or release individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States.

#### **Extension of prohibition on use of funds to construct or modify facilities in the United States to house detainees transferred from United States Naval Station, Guantanamo Bay, Cuba (sec. 1022)**

The committee recommends a provision that would extend until December 31, 2019, the prohibition on the use of funds provided to the Department of Defense to construct or modify facilities in the United States to house detainees transferred from United States Naval Station, Guantanamo Bay, Cuba.

#### **Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to certain countries (sec. 1023)**

The committee recommends a provision that would extend until December 31, 2019, the prohibition on the use of funds provided to the Department of Defense to transfer or release individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to Libya, Somalia, Syria, and Yemen.

#### **Extension of prohibition on use of funds to close or relinquish control of United States Naval Station, Guantanamo Bay, Cuba (sec. 1024)**

The committee recommends a provision that would extend until fiscal year 2019, the prohibition on the use of funds provided to the Department of Defense to close or abandon United States Naval Station, Guantanamo; to relinquish control of Guantanamo Bay to the Republic of Cuba; or to implement a material modification to the Treaty between the United States of America and Cuba signed at Washington, D.C. on May 29, 1934, that constructively closes United States Naval Station, Guantanamo Bay.

**Authority to transfer individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States temporarily for emergency or critical medical treatment (sec. 1025)**

The committee recommends a provision that would authorize the temporary transfer of individuals detained at United States Naval Station, Guantanamo Bay, Cuba to the United States for necessary medical treatment that is not available at Guantanamo.

**Subtitle D—Miscellaneous Authorities and Limitations**

**Strategic guidance documents within the Department of Defense (sec. 1031)**

The committee recommends a provision that would amend section 113(g) of title 10, United States Code, to identify and clarify three strategic guidance documents that support and implement the National Defense Strategy, as well as describing the elements to be included in each document. It would also require the Secretary of Defense to submit these strategic documents to the congressional defense committees.

In 2016, the committee acted to revitalize the Department of Defense's strategy development process. The National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) replaced the Quadrennial Defense Review with a framework for a more coherent and comprehensive National Defense Strategy. The committee applauds the Secretary of Defense's efforts in crafting the National Defense Strategy.

The committee recognizes that the ultimate success of the National Defense Strategy will depend on how it is implemented by strong civilian leadership in the Department of Defense, and the rigorous oversight of the Congress. In order to ensure that the congressional defense committees have the necessary information to perform necessary oversight of the Department of Defense's implementation of the National Defense Strategy, the provision would require the Secretary of Defense to submit, to the congressional defense committees, the three strategic guidance documents which contain the policy direction for executing the strategy: the Defense Planning Guidance (DPG), the Contingency Planning Guidance (CPG)/Guidance for the Employment of the Force (GEF), and the Global Defense Posture Report.

The DPG establishes goals, priorities, and objectives, including fiscal constraints, to direct the preparation and review of the program and budget recommendations of all elements of the Department. The CPG/GEF provides policy guidance on the preparation and review of contingency and campaign plans, which drive requirements for the Department's program and budget requests. The Global Defense Posture Report includes a description of U.S. forces, capabilities, and equipment assigned and allocated outside of the United States required to execute the strategy.

These strategic guidance documents set forth the Secretary of Defense's policy guidance as to what the Department should buy for the joint force, how the joint force is to be used, and where the joint force is to be postured around the world in order to execute the National Defense Strategy. These are fundamental issues sub-

ject to the oversight of the congressional defense committees. Therefore, the committee believes it is both necessary and appropriate that the Secretary of Defense should submit these documents to the congressional defense committees.

**Guidance on the electronic warfare mission area and joint electromagnetic spectrum operations (sec. 1032)**

The committee remains concerned that electronic warfare is a warfighting area where our peer adversaries, such as China and Russia, are establishing significant asymmetric advantages. The Defense Science Board identified numerous vulnerabilities in the May 2015 Electronic Warfare assessment, and the Department attempted to address these in the June 2017 Department of Defense Electronic Warfare Strategy. However the committee assesses that the Department continues to approach the electronic warfare mission area and joint electromagnetic spectrum operations in an insufficient and uncoordinated manner that risks the joint force lagging further behind our peer competitor efforts.

The provision would establish a senior designated official and an associated cross functional team to update the June 2017 Department of Defense Electronic Warfare strategy and submit it, along with a road map of the referenced requirements and plans, not later than 180 days after the enactment of this Act to the congressional defense committees. The road map would include: the efforts undertaken in support of the 2017 DOD Electronic Warfare strategy and any updates or changes to the strategy since its issuance; a review of the vulnerabilities identified in the May 2015 Electronic Warfare assessment; an assessment of the capability of the joint force to conduct joint electromagnetic spectrum operations against peer competitors; and a description of actions, performance metrics, and projected timelines for achieving key capabilities for electronic warfare and joint electromagnetic spectrum operations. The road map would also include an analysis of any personnel, resourcing, capability, authority, or other gaps to be addressed in order to ensure effective implementation of the strategy across all relevant elements of the Department.

Additionally, in consultation with the Director of the Defense Intelligence Agency, the cross functional team would provide an assessment of the electronic warfare capabilities of Russia and China, a review of U.S. vulnerabilities with respect to electronic systems, and a study of the manner in which Russia and China develop electronic warfare doctrine, with order of battle across multiple domains, and long-term research trends of each country in connection with such warfare.

The senior designated official would also be required to submit to the congressional defense committees an update describing the status of the efforts of the Department in accomplishing the tasks specified in the electronic warfare strategy and the road map every 90 days after the initial report is released.

**Limitation on use of funds for United States Special Operations Command Global Messaging and Counter-Messaging platform (sec. 1033)**

The committee recommends a provision that would prohibit the use of any funds authorized to be appropriated by this Act for United States Special Operations Command's (SOCOM) global messaging and counter-messaging (GMCM) platform until the Secretary of Defense submits to the congressional defense committees a report containing detailed information relating to the platform and SOCOM's military information support enterprise.

The committee notes that the budget request includes \$18.0 million in Operations and Maintenance, Defense-wide, and \$7.0 million in Procurement, Defense-Wide for SOCOM's GMCM platform. The committee understands that the Secretary of Defense has identified SOCOM as the Department of Defense's (DOD) proponent for military information support operations (MISO) and directed the establishment of a centralized DOD MISO GMCM platform at SOCOM. Given SOCOM's transregional approach to matters within its purview, the committee believes the command is positioned to play an important role in supporting the GMCM activities of the other combatant commands by enabling facilities and contracting efficiencies, the capture and adoption of best practices, and messaging consistency across geographic boundaries. However, the budget request lacks sufficient detail on the plan for establishment of the GMCM capability, including the identification of budget, infrastructure and equipment requirements for the platform to reach full operational capability as well as an identification of long-term sustainment costs. Additionally, the committee requires greater understanding of how GMCM planning and activities will be de-conflicted and, where possible, integrated with the planning and activities of the combatant commands as well as other relevant departments and agencies of the United States Government, including the Department of State's Global Engagement Center.

Lastly, the committee is concerned that the doctrine, organization, training, materiel, leadership and education, personnel and facilities applicable to military information support capabilities has not kept pace with emerging challenges and opportunities in the information environment. Specifically, the committee believes the MISO enterprise remains too focused on tactical activities using traditional media and has not evolved to adequately counter adversary messaging through social media and other modern forms of communication. The committee notes that the U.S. Central Command (CENTCOM) "Web Ops" capability was established to counter online propaganda of the Islamic State of Iraq and Syria and is the predecessor to the proposed SOCOM GMCM platform. Despite the existence of a military information support military occupational specialty for decades, the MISO enterprise played only a minimal, supporting role in the activities of the CENTCOM Web Ops platform. The committee believes this situation is symptomatic of broader deficiencies in the MISO enterprise. Therefore, the recommended provision requires the Secretary of Defense to conduct a review of the doctrine, organization, training, materiel, leadership and education, personnel and facilities applicable to military information support capabilities with a goal of improving the capa-

bilities of the MISO enterprise to more effectively operate in the information environment against both state and non-state actors.

**Sense of Congress on the basing of KC-46A aircraft outside the continental United States (sec. 1034)**

The committee recommends a provision that would express the sense of Congress regarding the basing of KC-46A tanker aircraft outside of the continental United States.

**Relinquishment of legislative jurisdiction of criminal offenses committed by juveniles on military installations (sec. 1035)**

The committee recommends a provision that, in the case of any military installation or portion of a military installation of which exclusive legislative jurisdiction of criminal offenses committed by juveniles is retained by the United States as of the date of the enactment of this Act, would require the relevant service secretary to seek to relinquish to the State, Commonwealth, territory, or possession concerned legislative jurisdiction of such offenses such that the United States and the State, Commonwealth, territory, or possession would have concurrent legislative jurisdiction of such offenses.

**Policy on response to juvenile-on-juvenile abuse committed on military installations (sec. 1036)**

The committee recommends a provision that would require the Secretary of Defense to establish a policy, applicable across the military installations of the Department of Defense, on the response of the Department to allegations of juvenile-on-juvenile abuse on military installations.

**Subtitle E—Studies and Reports**

**Report on highest-priority roles and missions of the Department of Defense and the Armed Forces (sec. 1041)**

The committee recommends a provision that would require the Secretary of Defense to provide a report to the congressional defense committees concerning a re-evaluation of the highest priority missions for the Department of Defense, the roles of the Joint Force in the performance of such missions, and the capability requirements which stem from them. The required report, due February 2019, includes a series of questions further inquiring about the specific impacts of the National Defense Strategy on the Department of Defense.

Over the years, the committee has received briefings and testimony describing the degrading state of U.S. military capabilities vis-à-vis peer adversaries. The reasons for this are numerous: unstable budgets, sustained high operational tempo, as well as increased investments in military capabilities of adversaries. The committee has been concerned about the state of U.S. overmatch for several years and believes that changing this trend is a high priority for the Department.

For this reason, the committee believes that the National Defense Strategy correctly characterizes the leading strategic chal-

challenge facing the United States as the reemergence of great power competition. Furthermore, the NDS prioritizes the development of a more lethal joint force to deter, and if necessary, defeat aggression by peer-adversaries. The committee is supportive of efforts by the Department, to implement the NDS. However, as the Commission on the National Defense Strategy recommends, the Department must conduct further analytical work to identify the specifics of how the NDS will be implemented.

The reporting requirement poses ten overarching questions that the committee believes are natural issues that arise from the change in priorities identified in the NDS. Those questions include such things as an update to the roles and missions of the military services, how the NDS impacts the military's end strength requirements, how the military will be conducting the counterterrorism mission, and how capability requirements and investments throughout the Joint Force are impacted by focusing on peer-adversaries and operating in a contested environment. These questions are key for the committee to better understand the implications of the NDS, and better facilitates the committee to perform oversight over budgetary authorizations.

As related to this reporting requirement, the committee recommends several provisions that would limit the obligation and expenditure of authorized funding for various programs, until this reporting requirement is met.

**Annual reports by the Armed Forces on Out-Year Unconstrained Total Munitions Requirements and Out-Year inventory numbers (sec. 1042)**

The committee recommends a provision that would amend title 10 to require the Services provide an annual report to the Congress detailing the Armed Forces' annual total munitions requirements and out-year munitions inventory numbers. The details of the report would be based on the Department of Defense's munitions requirements process.

**Comprehensive review of operational and administrative chains-of-command and functions of the Department of the Navy (sec. 1043)**

The committee recommends a provision that would require the Secretary of the Navy to conduct a comprehensive review of the operational and administrative chains-of-command and functions in the Department of the Navy.

**Military aviation readiness review in support of the National Defense Strategy (sec. 1044)**

The committee recommends a provision that would require the Secretary of Defense to establish a joint review of military aviation and deliver an accompanying report to the Committees on Armed Services of the Senate and the House of Representatives no later than 1 year after the enactment of this Act.

**Report on capabilities and capacities of Armored Brigade Combat Teams (sec. 1045)**

The committee recommends a provision that would require the Secretary of the Army to submit to the Committees on Armed Services of the Senate and the House of Representatives a report on the capabilities and capacity of Armored Brigades Combat Teams (ABCT) no later than 60 days after the enactment of this bill into law.

The committee notes that the Army has taken action to improve readiness over the last several years, but the focus has been primarily on infantry brigade combat teams (IBCT). In light of requirements in the National Defense Strategy (NDS), the committee would like to know the total number of ABCTs required to support the NDS and how the Army will equip and field future ABCTs. Furthermore, if current levels of mechanized infantry are insufficient to maintain the combined arms nature of the ABCTs, the committee would like to understand how the Army will address the need for additional mechanized infantry companies. In addition, the committee would like to understand how the Army is improving battalion and brigade-level combined arms live-fire exercises both at home station and at the Combat Training Centers. The committee would like to know what training is being conducted for ABCTs in combined arms for air defense and counter unmanned aerial vehicles missions with organic weapons and tactics. The Secretary should also report plans for improving personnel preparedness by the reduction of non-deployable soldiers, combat vehicle crew stability, and the material readiness of key combat systems.

The committee notes that several key combat systems, such as Abrams tanks, Bradley fighting vehicles, Paladin howitzers, and M88 recovery vehicles, have unacceptably high non-mission capable rates due to the lack of repair parts and number of qualified mechanics. The Secretary is encouraged to provide a status update on the mission capable rates of these key combat systems and explain the Army's plan to repair these deficiencies. Finally, the report should outline plans to modernize ABCTs to fill capability gaps, improve key weapon systems and ensure effective, suitable and survivable mobile command, control and communications.

**Improvement of annual report on civilian casualties in connection with United States military operations (sec. 1046)**

The committee recommends a provision that would amend section 1057 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) to clarify annual reporting requirements on civilian casualties in connection with United States military operations.

**Report on Department of Defense participation in Export Administration Regulations license application review process (sec. 1047)**

The committee recommends a provision that would require the Under Secretary of Defense for Policy to submit to the congressional defense committees a report on the participation by the Department of Defense in the process for reviewing applications for

export licenses under the Export Administration Regulations as a reviewing agency under Executive Order 12981. The provision would require that the report be submitted to the congressional defense committees not later than 180 days after the enactment of this Act and every 180 days thereafter until the date that is 3 years after such date of enactment.

**Automatic sunset for future statutory reporting requirements (sec. 1048)**

The committee recommends a provision that would establish an automatic sunset of three years for future statutory reporting requirements of indefinite duration. The committee notes that excess reporting requirements impose costs on the Department of Defense that compound over time and three years would provide adequate time to determine the necessity of a reporting requirement and to request an extension for those requirements that continue to serve an important purpose to the committee's oversight role.

**Repeal of certain Department of Defense reporting requirements that otherwise terminate as of December 31, 2021 (sec. 1049)**

The committee recommends a provision that would repeal certain Department of Defense reporting requirements that are otherwise set to terminate as of December 31, 2021. The committee notes that the included reports have served their oversight purpose and will be repealed so as to reduce the burden placed on the Department of Defense by compounding reporting requirements, which drive up costs and distract offices from their primary missions.

**Report on potential improvements to certain military educational institutions of the Department of Defense (sec. 1050)**

The committee recommends a provision that would require the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives no later than December 1, 2019, reviewing educational institutions of the Department of Defense. The review would be conducted by an outside organization with expertise in analyzing matters in connection with higher education.

**Recruiting costs of the Armed Forces (sec. 1051)**

The committee recommends a provision that would require the Secretary of Defense to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives on the costs of recruiting for the Armed Forces.

**Subtitle F—Other Matters**

**Authority to transfer funds for Bien Hoa dioxin cleanup (sec. 1061)**

The committee recommends a provision that would authorize the Secretary of Defense to transfer funds to the Secretary of State for the Bien Hoa dioxin cleanup in Vietnam. Since the normalization of U.S.-Vietnam relations in 1995, the United States and Vietnam

have made remarkable progress in transcending the legacy of war and building a strategic partnership to defend shared interests and common values. The committee recognizes that the Bien Hoa dioxin cleanup—carried out with financial contributions from the Government of Vietnam, the Department of State, the Department of Defense, and other international partners—would be another significant milestone in the progress of U.S.-Vietnam relations and would support the continued advancement of a strategic partnership rooted in a shared vision for a free and open Indo-Pacific region that is peaceful, stable, and prosperous.

**Improvement of database on emergency response capabilities (sec. 1062)**

The committee recommends a provision that would amend section 1406 of the National Defense Authorization Act for Fiscal Year 2007 (Public Law 109–364) to require the Department of Defense (DOD) to establish the database required under that section not later than one year after the date of enactment of this Act. Furthermore, the provision would require the database to include information on the emergency response capabilities of the National Guard of each U.S. Territory and information on the cyber capabilities of National Guard and Reserve units identified by the DOD as critical for response to domestic natural or man-made disasters. Finally, the provision would clarify that the Department may use an existing database or system to fulfill the requirement to establish a database under certain circumstances.

**Acceptance and distribution by Department of Defense of assistance from certain nonprofit entities in support of missions of deployed United States personnel around the world (sec. 1063)**

The committee recommends a provision that would express the sense of the Senate regarding collaboration with and the provision of logistical support to covered non-Federal entities, including Spirit of America, to advance the military missions of the Armed Forces.

The provision would also authorize the Department of Defense, consistent with applicable guidance, to accept from any covered non-Federal entity privately funded humanitarian, economic, and other nonlethal assistance; and respond to requests from covered non-Federal entities for the identification of the needs of local populations abroad for assistance, and coordinate with such entities in the provision and distribution of such assistance.

**United States policy with respect to freedom of navigation and overflight (sec. 1064)**

The committee recommends a provision that would state that it is the policy of the United States to fly, sail, and operate throughout the oceans, seas, and airspace of the world wherever international law allows. The provision would also describe the steps the Secretary of Defense should take in furtherance of that policy.

**Prohibition of funds for Chinese language instruction provided by a Confucius Institute (sec. 1065)**

The committee recommends a provision that would prohibit funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2019 under this Act to be obligated or expended for Chinese language instruction provided by a Confucius Institute.

The provision would also prohibit funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2019 under this Act to be obligated or expended to support a Chinese language program at an institution of higher education that hosts a Confucius Institute. The provision would allow the Under Secretary of Defense for Personnel and Readiness to waive this limitation if the Under Secretary provides a certification to the congressional defense committees that, among other elements, Confucius Institute employees and instructors will have no affiliation with the program, provide no instruction or support to the program, and have no authority or influence with regard to the curriculum and activities of the program.

**Items of Special Interest**

**Audit materiality standards relating to valuation**

The committee commends the Department of Defense (DOD) on beginning its first department-wide financial audit. The committee views the audit as vital to the health of Department finances and business-related activities which directly impact our national security. In order to achieve maximum benefit from conducting an annual full financial audit, the Department must exercise continued transparency to this committee and to the American people.

The committee understands that the Department is still developing materiality standards regarding property, plant, and equipment valuation for the department-wide audit. The committee also understands that judgments about materiality standards for valuation have been developed and used by other government entities and large private companies in the process of achieving an unqualified audit opinion.

Materiality standards and thresholds are critical factors in the conduct and results of a full financial audit. Therefore, the committee directs the Department to provide an update on their assertions regarding materiality standards relating to valuation within the department-wide audit in order to promote necessary transparency and accountability by December 31, 2018.

**Business case analysis for the 168th Air Refueling Wing**

The committee notes that the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291) required the Secretary of the Air Force to conduct a business case analysis on the creation of an Active Duty association for the 168th Air Refueling Wing. However, the committee notes that since the prescribed analysis was completed in December 2016, two important developments have occurred that were not taken into account. First, consideration of the addition of two F–35A squadrons at Eielson Air Force Base, Alaska, in 2020,

and an examination of future shortfalls in air refueling requirements due to such additional aircraft. Second, consideration of the increased operations tempo of the 168th Air Refueling Wing due to increased mission requirements of the North American Aerospace Defense Command. The committee believes that consideration of these two factors could potentially have led to different conclusions in the 2016 analysis.

Therefore, the committee directs the Secretary of the Air Force to update the 2016 business case analysis taking into consideration the aforementioned factors and brief the Committees on Armed Services of the Senate and House of Representatives on its results no later than March 1, 2019.

### **Chemical, Biological, Radiological, and Nuclear Response Enterprise**

A robust Chemical, Biological, Radiological, and Nuclear (CBRN) Response Enterprise is critical to our nation's security. U.S. Northern Command (NORTHCOM) plays an integral part of any domestic CBRN response, and the committee applauds the role the National Guard performs in such a response. The committee also notes the importance of coordinated combined training and operations between the Department of Defense (DOD) and civilian first responders and agencies, including the Department of Homeland Security (DHS).

To further enhance this collaboration, the committee believes DOD and civilian agencies that sponsor first responder training should coordinate such training opportunities at the individual level. As NORTHCOM continues to execute unit-level and enterprise-wide training events, such as through exercises with major metropolitan cities, the Department should consider allowing state and local first responders to participate in CBRN response training programs provided by the individual military services, particularly those supported by Federal Emergency Management Agency (FEMA) grants, such as those offered at the Army's Maneuver Support Center of Excellence (MSCOE), on a space-available basis. This would better integrate NORTHCOM's overall response to a CBRN event. The committee also believes that there are cost efficiencies and improved information-sharing and integration that could result from using existing DOD CBRN training facilities.

Therefore, the committee directs DOD, in coordination with DHS, to develop a plan to expand individual training opportunities on a space-available basis for state and local first responders. This plan should examine and take into consideration: (1) Existing DOD programs that provide trained and certified service members to serve in the CBRN Response Enterprise (CRE) including standardized training products and facilities offered by the Army's MSCOE and the Army Chemical, Biological, Radiological, and Nuclear School and their ability to provide courses to non-DOD students that comply with civilian standards and industry best practices; (2) Existing programs and training standards set by the National Domestic Preparedness Consortium (NDPC), the Emergency Management Institute (EMI), and the Center for Domestic Preparedness (CDP), a training component of FEMA; (3) Any additional or unmet CBRN training requirements that are needed by the National Guard, De-

partment of Homeland Security, other federal agencies, and state and local first responders that can currently be provided by the Department of Defense and military services to better integrate civilian CBRN training; and (4) Any other factors the Secretary deems appropriate. The Department should submit such a plan to the committee no later than March 1, 2019.

**Comptroller General report on monitoring ongoing challenges in remotely piloted aircraft community**

The committee continues to follow the retention and quality of life of pilots and sensor operators in the remotely piloted aircraft (RPA) community. In April 2018, the Air Force provided a report on the RPA Culture and Process Improvement Plan (CPIP), pursuant to National Defense Authorization Act (NDAA) for Fiscal Year 2018 (Public Law 115–91). The committee applauds the Air Force on the achievements detailed in the report, including reaching a 10:1 crew-to-combat line ratio in December 2016.

The committee notes that the CPIP report detailed ongoing shortfalls in quality of life services for the RPA community and contained little detail on the Air Force’s plans to address those shortfalls. The Air Force’s own studies have found poor quality of life have a major impact on morale and wellbeing in the RPA community, which is compounded by the effects of high demand and persistent shiftwork.

The committee reiterates its commitment to receiving a detailed plan from the Air Force on expeditiously expanding access to housing, childcare, exchanges and commissaries, quality schools, and spouse employment opportunities at military installations where RPAs operate. The committee also notes that such a plan was required by Fiscal Year 2018 NDAA.

The committee notes the Air Force’s plans to implement a combat-to-dwell policy within the next six years. While the committee supports that goal, it remains concerned about ongoing stress in the RPA community in the interim and the effect it will have on morale and retention.

Therefore the committee directs Comptroller General of the United States to complete a report reviewing the Air Force’s plan to expand services at RPA bases, as well as the service’s plans to implement a combat-to-dwell policy. The report should address: (1) Challenges in expanding services at RPA bases and mitigation options; (2) How the service can incrementally reduce RPA operator stress and improve workload prior to achieving 1:0.5 combat-to-dwell; (3) How to balance production of additional sorties with attendant staffing requirements to support training; and (4) How to achieve retention goals to support the timeline for increasing the combat-to-dwell time ratio. Preliminary observations shall be provided to the Committees on Armed Services of the Senate and the House of Representatives by the end of March 2019. At that time, a final product due date will be determined.

**Comptroller General review of Federally Funded Research and Development Centers**

The committee understands that the Department of Defense (DOD) maintains long-term strategic partnerships with Federally

Funded Research and Development Centers (FFRDCs) and relies on their capabilities to quickly respond to the needs of the Department while offering independent and objective scientific and technical advice, and other research services. FFRDCs provide federal agencies with capabilities that cannot be effectively met by the federal government or the private sector alone.

FFRDCs are often given unique access to government data, employees, and facilities to complete their research. According to the Federal Acquisition Regulation (FAR) that regulates FFRDCs, these organizations must (1) Operate in the public interest with objectivity and independence; (2) Be free from organizational conflicts of interest; and (3) Fully disclose their activities to their sponsoring agency.

The committee supports the Department in utilizing FFRDCs for high quality and independent research to fulfill Congressional mandates and to otherwise inform DOD decision making. In fiscal year 2015, the Federal Government spent \$128.6 billion on R&D. Of that amount, \$11.1 billion went to FFRDCs. FFRDCs are a critical resource for decision makers in DOD and Congress. Due to the sensitive and extensive research conducted by FFRDCs, the committee encourages the Department to ensure that FFRDCs continue to maintain the neutrality and objectivity imperative to the completion of quality products without the pressures of predetermined outcomes.

The committee directs the Comptroller General of the United States to conduct a review of the Department's use of FFRDCs over the past 5 years and to provide a report on this review to the Committees on Armed Services of the Senate and the House of Representatives by no later than January 31, 2019. The review shall include, at a minimum: (1) The amount each military department and the Office of the Secretary of Defense spent on FFRDC research in Fiscal Years 2013 through 2017; (2) Identification of each research project conducted during those years; (3) FFRDC and Department policies intended to maintain the research independence of FFRDCs; (4) The number of FFRDC recommendations that have been implemented by DOD since Fiscal Year 2007; and (5) The Comptroller General's view of the value provided to the Federal Government by FFRDCs and the ability of private sector companies to provide a similar research option at competitive prices.

### **Department of Defense information operations**

The committee notes the importance of information superiority in peacetime competition and modern warfare. The committee concurs with the priority placed on information operations in the President's National Security Strategy (NSS) and the necessity to drive effective communications to "expose adversary propaganda and disinformation." The Department of Defense (DOD) further highlighted this objective in the National Defense Strategy (NDS). Defensively, the NDS prioritized interagency cooperation with the Department of State and other agencies "to address areas of economic, technological, and information vulnerabilities." Offensively, the NDS called for tactical, operational, and strategic investments "to gain and exploit information" and to "deny competitors those same

advantages". The committee supports DOD's broad vision for achieving and maintaining information superiority.

Moreover, the committee notes that DOD actively produces content for information operations seeking to fulfill the NSS objective of exposing adversary propaganda and disinformation. Even so, the committee recognizes the technical and political difficulties inherent in transmitting such content into target markets. Maintaining information superiority during peacetime competition requires interagency cooperation to move beyond content production into dissemination in both permissive and contested information environments. In order to effectively operate in the information environment, DOD must continue to leverage the full spectrum of capabilities, ranging from existing telecommunication assets to emerging technologies in cyberspace.

Therefore, the committee directs the Secretary of Defense to submit a report to congressional defense committees not later than 180 days after the enactment of this Act identifying any capability gaps that would inhibit the ability of the Geographic Combatant Commanders to disseminate information content in support of the NSS and the NDS, to include content produced by other elements of the U.S. Government.

#### **Marine Mammal Program and Support to Civil Authorities**

The committee notes that the Department of the Navy's Marine Mammal Program has been successful in training marine mammals to perform countermeasures and mine detection to ensure port security. The committee urges those state and local authorities wishing to request assistance from this program for homeland security purposes do so through the Assistant Secretary of Defense for Homeland Defense and Global Security. Such requests are made on a reimbursable basis and may not adversely affect military preparedness in accordance with section 2564 of title 10, United States Code, and sections 272–276 of title 10, United States Code.

#### **Navy mine countermeasures aboard vessels of opportunity**

The committee notes the Navy program-of-record includes 24 Littoral Combat Ship (LCS) mine countermeasures (MCM) mission packages. The committee understands the Navy plans to use nine of these MCM mission packages on vessels of opportunity (VOOs). The committee recognizes that VOOs can provide additional MCM host platform capacity to meet warfighting capability requirements and account for MCM maintenance cycles.

Therefore, not later than February 1, 2019, the committee directs the Secretary of the Navy to submit a report to the Committees on Armed Services of the Senate and the House of Representatives on the plan to field MCM mission packages on VOOs. The report shall include the following: (1) A description of VOOs approved or under consideration to serve as a MCM host platform; (2) The VOO shipboard systems and integration necessary to serve as a MCM host platform; (3) The MCM mission package systems planned to be employed from a VOO; (4) The test plan necessary to achieve operational effectiveness and suitability determinations for VOOs serving as MCM host platforms; and (5) The schedule and funding by

fiscal year necessary to achieve the full operational capability for VOOs serving as MCM host platforms.

#### **Nimitz-class aircraft carrier service life assessment**

The committee notes that the first *Nimitz*-class aircraft carrier, USS *Nimitz* (CVN-68) is planned to decommission in fiscal year 2025 at its expected service life of 50 years of service. The committee further notes that the Navy has extended the service lives of many ship classes, including *Ohio*-class nuclear-powered ballistic missile submarines from 30 years to 42 years. Recognizing the policy of the United States to achieve a 355-ship Navy includes 12 aircraft carriers, the committee is interested in better understanding the technical and engineering feasibility of extending *Nimitz*-class aircraft carriers beyond the class' 50-year planned service life.

Therefore, the committee directs the Secretary of the Navy to submit a report to the congressional defense committees not later than January 1, 2019, on the options to extend the service lives of *Nimitz*-class aircraft carriers. This report shall include each of the following: (1) The technical and engineering feasibility of extending the service life of each *Nimitz*-class aircraft carrier; (2) The duration of such service life extensions; (3) Notional cost and schedule estimates for *Nimitz*-class aircraft carrier service life extensions; (4) Public or private shipyard availability to accomplish such service life extensions; and (5) An assessment by the Secretary on the merits of implementing such options.

#### **Overclassification of Department of Defense information**

The committee believes protecting national security information and demonstrating our commitment to transparency through the proper application of classification standards are equally important and compatible priorities. However, the committee is growing increasingly concerned by the Department of Defense's recent tendency to restrict information that was previously unclassified and had been routinely available publicly. For example, in materials submitted in support of the services' budget requests, similar information was marked by some services as "sensitive but unclassified" but left unmarked by other services. In addition, the committee has observed recent incidents limiting distribution of reports from the Comptroller General of the United States, among others. While the committee understands the need to protect operational security, unnecessarily restricting the ability of the committee to share information makes it difficult for the committee to perform its constitutional oversight responsibilities in a transparent manner. Moreover, restricting information limits the American taxpayers' visibility into the Department's use of its significant budgetary resources.

The committee looks forward to working with the Department to prevent overzealous use of dissemination control and handling markings that could unnecessarily restrict information sharing. Doing so will enable the committee to be open and transparent about key information, to include reports of the Comptroller General and other audit organizations, that informs the committee's deliberations and oversight activities.

**Policy of the Department of Defense on contract terms to support achievement of full financial audits**

The committee directs the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense (Comptroller) to jointly develop a report on how future Department of Defense (DOD) contracts will support the valuation of, and accounting for, inventory and related property, general property, plant, and equipment constructed or acquired in accordance with generally accepted accounting principles. The report must be submitted by March 1, 2019 to the Committees on Armed Services of the Senate and the House of Representatives.

The committee urges the DOD to recognize the complex changes in business processes, including contracting, that must occur to achieve an unqualified audit opinion. Currently, some DOD contracts do not consider the need for auditors to accurately value and account for associated property or to separately identify and track all capital and expense-type items. This report should outline a path forward for a common-sense policy that accounts for these business process needs without imposing undue additional bureaucracy or slowness on the organization.

**Report on training and readiness of Navy surface ships**

The committee notes the 2017 Navy Comprehensive Review and Strategic Readiness Review (SRR) of surface Navy incidents identified unit-level certification standards as an area of concern. For example, the SRR found, “The Navy’s readiness standards for training opportunities, certifications, maintenance availabilities, and manning quality and levels, have been thoughtfully established. However, the Navy allowed these standards to erode to the point that they are nearly ineffective, especially in the case of Forward Deployed Naval Forces in Japan.”

Therefore, not later than 60 days after the date of the enactment of this Act, the Secretary for the Navy shall submit to the Committees on Armed Services of the Senate and the House of Representatives a report on the training and readiness of Navy surface ships. This report shall include the following: (1) A description of the tasks each Navy surface ship shall accomplish to achieve each required training certification; (2) A description of the manner in which the readiness of Navy surface ships will be measured and assessed in order to ensure that requirements for each training certification applicable to such ships are being met; (3) A description of the required frequency of recertifications of Navy surface ships with respect to each required training certification; (4) A description of waivers and associated mitigation measures allowable for each required training certification; and (5) Any other matters the Secretary deems appropriate.

**Review of Surface Warfare Officer initial training**

The committee understands the current Navy Surface Warfare Officer (SWO) candidate training curriculum is comprised of primarily classroom and simulator training methods. The committee believes SWO candidates lack sufficient at-sea training before reporting to their first ships. The committee is concerned that the lack of practical at-sea experience before reporting to their first

ships may result in SWOs having gaps in their foundational safety, seamanship, and navigation knowledge, skills, and experience. The committee has previously encouraged the Navy to utilize Navy Yard Patrol craft for SWO candidate training in the Senate report accompanying S. 2943 (S. Rept. 114–255) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328). Additionally, the 2017 Comprehensive Review of Surface Force Incidents directed an evaluation of the use of YP craft in all officer accession programs, including the feasibility of expanding YP craft use.

Therefore, the Secretary of the Navy is directed to review and determine the adequacy and appropriate balance of practical at-sea, virtual, classroom, and other training for SWO candidates, including accessions from the U.S. Naval Academy, Naval Reserve Officer Training Corps, and Officer Candidate School, and the extent to which such training provides the necessary foundational safety, seamanship, and navigation knowledge, skills, and experience. Not later than October 1, 2018, the Secretary shall provide a report to the congressional defense committees and the Comptroller General of the United States with the results of this review and any associated policy changes.

Not later than 120 days after receiving the Secretary of the Navy's report, the Comptroller General is directed to provide the congressional defense committees with a written review of the Secretary's report, including matters in connection with the Secretary's report and review that the Comptroller General considers appropriate.

### **Strategic dispersal of capital ships**

The committee continues to affirm the judgment of the Chiefs of Naval Operations, first stated in the Senate report (S. Rept. 209–254) accompanying the National Defense Authorization Act for Fiscal Year 2007 (Public Law 109–364), that the Atlantic Fleet should continue to be dispersed in two homeports. On January 14, 2009, the Navy issued a Record of Decision to establish a second Atlantic Fleet nuclear aircraft carrier homeport at Naval Station Mayport in order to strategically disperse some of the most expensive and essential assets of the U.S. Fleet. The 2010 Quadrennial Defense Review validated the Navy's decision, stating “to mitigate the risk of a terrorist attack, accident, or natural disaster, the U.S. Navy will homeport an East Coast carrier in Mayport, Florida.”

The committee remains concerned that, despite the validated need for dispersal of some the Navy's most expensive assets along the East Coast, the Navy has continually deferred projects necessary to achieve this strategic imperative. The committee believes that the Navy must review and update analysis of the need for strategic dispersal of the Atlantic Fleet along the East Coast. Further, the committee believes that, should such a review revalidate the strategic imperative for further dispersal of these ships, the Navy must carry out implementation of plans to enable this dispersal.



## **TITLE XI—CIVILIAN PERSONNEL MATTERS**

### **Subtitle A—Department of Defense Matters**

#### **Inapplicability of certification of executive qualifications by qualification review boards of Office of Personnel Management for initial appointments to Senior Executive Service positions in Department of Defense (sec. 1101)**

The committee recommends a provision that would temporarily exempt the Department of Defense from the requirement that Office of Personnel Management qualification review boards certify candidates for senior executive service positions within the Department. The provision would sunset 2-years after enactment.

#### **Direct hire authority for science and technology reinvention laboratories and Major Range and Test Facilities Base facilities for recent science, technology, engineering, and mathematics graduates of minority-serving institutions (sec. 1102)**

The committee recommends a provision that would create a direct-hire authority at Science and Technology Reinvention Laboratories and Major Range and Test Facilities Base Facilities for graduates of minority-serving institutions with degrees in science, technology, mathematics, and engineering.

#### **Inclusion of Strategic Capabilities Office and Defense Innovation Unit Experimental of the Department of Defense in personnel management authority to attract experts in science and engineering (sec. 1103)**

The committee recommends a provision that would extend the existing direct hiring authority codified in section 1599h of title 10, United States Code, to the Strategic Capabilities Office and the Defense Innovation Unit Experimental.

#### **Enhancement of flexible management authorities for Science and Technology Reinvention Laboratories of the Department of Defense (sec. 1104)**

The committee recommends a provision that would extend and enhance existing direct hiring authorities at the Science and Technology Reinvention Laboratories (STRs) within the Department of Defense. These provisions would extend pilot programs from previous National Defense Authorization Acts based on the committee's continuing desire to ensure that the Department of Defense is able to recruit and retain high quality technical talent in its laboratories.

**Inclusion of Office of Secretary of Defense among components of the Department of Defense covered by direct hire authority for financial management experts (sec. 1105)**

The committee recommends a provision that would extend the direct hire authority created in section 1110 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) for financial management experts to include the Office of Secretary of Defense.

**Authority to employ civilian faculty members at the Joint Special Operations University (sec. 1106)**

The committee recommends a provision that would amend section 1595(c) of title 10, United States Code, to authorize the Secretary of Defense to employ and develop compensation policies for civilian professors, instructors, and lecturers at the Joint Special Operations University.

**Subtitle B—Government-Wide Matters**

**Alcohol testing of civil service mariners of the Military Sealift Command assigned to vessels (sec. 1121)**

The committee recommends a provision that would amend chapter 643 of title 10, United States Code, to authorize the Secretary of the Navy to prescribe regulations establishing a program to conduct on-duty reasonable suspicion alcohol testing and post-accident alcohol testing of civil service mariners of the Military Sealift Command assigned to vessels. In addition, this provision would amend section 7479 of such title to permit release of alcohol testing results to the Coast Guard.

**Expedited hiring authority for college graduates and post secondary students (sec. 1122)**

The committee recommends a provision that would modify the recruitment and hiring process to provide additional flexibility in hiring college graduates and students. This authority would allow Federal agencies to determine recruitment sources and processes for the solicitation of applications in order to compete for top talent. The Director of the Office of Personnel Management would have the authority to cap the number of hires made under this authority.

**Increase in maximum amount of voluntary separation incentive pay authorized for civilian employees (sec. 1123)**

The committee recommends a proposal that would amend sections 3523 and 9902 of title 5, United States Code, to increase the maximum amount of separation pay authorized for Voluntary Separation Incentive Pay (VSIP) from the current ceiling of \$25,000 to \$40,000, and includes an annual adjustment in accordance with the Consumer Price Index. The maximum payable amount has not been adjusted since VSIP was first authorized by the Chief Human Capital Officers Act of 2002 (title XIII of Public Law 107–296).

**One-year extension of temporary authority to grant allowances, benefits, and gratuities to civilian personnel on official duty in a combat zone (sec. 1124)**

The committee recommends a provision that would extend by one year the discretionary authority of the head of a federal agency to provide allowances, benefits, and gratuities comparable to those provided to members of the Foreign Service to an agency's civilian employees on official duty in a combat zone.

**One-year extension of authority to waive annual limitation on premium pay and aggregate limitation on pay for Federal civilian employees working overseas (sec. 1125)**

The committee recommends a provision that would amend section 1101 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Public Law 110-417), as most recently amended by section 1137 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), to extend through 2019 the authority of heads of executive agencies to waive limitation on the aggregate of basic and premium pay of employees who perform work in an overseas location that is in the area of responsibility of the commander of U.S. Central Command (CENTCOM), or a location that was formerly in CENTCOM, but has been moved to an area of responsibility for the Commander, U.S. Africa Command, in support of a military operation or an operation in response to a declared emergency.

**Items of Special Interest**

**Competitive salary and benefits for science, technology, engineering, and mathematics professionals**

The committee believes the Department of Defense must develop new and innovative methods to attract and manage talent with highly valuable technical skills. The committee recognizes that with new technologies and systems, the civilian and military workforce must be well-trained in the fields of science, technology, engineering, and mathematics (STEM). To this end, the Department of Defense, in coordination with the Office of Personnel Management and the Department of Energy, should conduct a comparison of salary and benefits for government professional engineers and scientists compared to similar positions in the private sector, and report the results of such comparison to the congressional defense committees no later than one year after the date of enactment of this Act. This study should consider new competitive strategies to hire and retain a skilled workforce in the STEM fields.



## **TITLE XII—MATTERS RELATING TO FOREIGN NATIONS**

### **Subtitle A—Assistance and Training**

#### **Clarification of authority for use of advisors and trainers for training of personnel of foreign ministries with security missions under defense institution capacity building authorities (sec. 1201)**

The committee recommends a provision that would modify section 332 of title 10, United States Code, regarding the provision of assistance to build the institutional capacity of foreign partners. The committee expects the Department of Defense to continue its efforts to emphasize strengthening the defense institutions of friendly foreign nations as a key component of its security cooperation programs and believes the modification contained in this provision will provide appropriate flexibility for the Department to fulfill its requirements under section 332 of title 10, United States Code.

#### **Modification to Department of Defense State Partnership Program (sec. 1202)**

The committee recommends a provision that would make a technical modification to section 341(b)(2) of title 10, United States Code to clarify the conditions under which vetting pursuant to section 362, title 10, United States Code, is required for the conduct of Department of Defense State Partnership Program activities. The committee notes that this technical correction does not constitute a change in congressional intent but rather seeks to clarify its longstanding intent that only those activities that involve the provision of training and assistance require such vetting.

#### **Expansion of Regional Defense Combating Terrorism Fellowship Program to include irregular warfare (sec. 1203)**

The committee recommends a provision that would amend section 354 of title 10, United States Code and expand the Regional Defense Combating Terrorism Fellowship Program to include irregular warfare. The committee notes that adversarial nations are becoming more aggressive in challenging U.S. interests and partnerships and destabilizing regional order through the use of asymmetric means that often fall below the threshold of traditional armed conflict. As such, the committee believes it is important that the Department of Defense's efforts to build the capacity of foreign partner forces reflect the evolving nature of the global security environment.

**Extension and modification of authority to support border security operations of certain foreign countries (sec. 1204)**

The committee recommends a provision that would amend section 1226 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended, by authorizing the Secretary of Defense to provide support on a reimbursable basis to the Government of Oman and Government of Pakistan for the purposes of supporting and enhancing efforts of the armed forces of Oman and Pakistan to increase and sustain security along the borders of Yemen and Afghanistan, respectively.

The provision would also require quarterly reports on the use of this authority, including descriptions of the efforts of each country reimbursed and assessments of the value of such efforts. Additionally, the provision would require the Secretary of Defense to submit a report 15 days prior to the provision of support under this authority to any country that has not previously received such support detailing the purpose, amount, and anticipated duration of the support along with a certification that the recipient country has increased border security and that the provision of such support is in the interest of United States national security. This provision would also add several conditions on reimbursements to Pakistan. Finally, the provision would extend this authority through December 31, 2021.

**Legal and policy review of advise, assist, and accompany missions (sec. 1205)**

The committee recommends a provision that would require the Under Secretary of Defense for Policy and the General Counsel of the Department of Defense, in coordination with the appropriate combatant commands, not later than 120 days after the date of enactment of this Act, to submit to the congressional defense committees a report on a review of the legal and policy frameworks associated with advise, assist, and accompany missions by United States military personnel.

**Technical corrections relating to defense security cooperation statutory reorganization (sec. 1206)**

The committee recommends a provision that would make technical corrections to title 10, United States Code, and other legislation referencing sections that were redesignated under section 1241 of the National Defense Authorization Act of Fiscal Year 2017 (Public Law 114–328).

**Naval Small Craft Instruction and Technical Training School (sec. 1207)**

The committee recommends a provision that would authorize the Secretary of Defense to operate and maintain the Naval Small Craft Instruction and Technical Training School (NAVSCIATTS).

**Subtitle B—Matters Relating to Afghanistan and Pakistan**  
**Afghanistan Security Forces Fund (sec. 1211)**

The committee recommends a provision that would extend the authority under section 1222 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112–238), as most recently amended by section 1212 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–125), to continue certain established provisions applicable to the Afghanistan Security Forces Fund (ASFF), including use of the funds, transfer authority, and acceptance of contributions to provide assistance to the security forces of the Ministry of Defense and Ministry of Interior of Afghanistan, including the provision of equipment, supplies, services, training, and funds for developing the capacity of Afghanistan’s security ministries.

This provision would also continue the authorization for the Department of Defense to accept the return of equipment procured using ASFF that is damaged, excess to need, or otherwise not accepted by the Afghan security forces. The provision would extend spending goals for the ASFF to promote the recruitment, training, and integration of women into the Afghan security forces. It would also include additional reporting criteria in the Secretary of Defense’s assessment of the progress made by the Afghan government toward achieving security, peace, and reconciliation objectives. Additionally, it would extend the authorization for the Secretary of Defense, in coordination with the Secretary of State, to withhold assistance for the Afghan National Defense and Security Forces if the determination is made that such progress has been insufficient. The committee encourages the provision of assistance to be closely tied to progress in these critical areas.

The committee has closely watched the ongoing efforts to reform Afghan government institutions and root out corruption in commitment to a peaceful, stable, and prosperous society. The introduction of the bilateral U.S.-Afghanistan Compact, with a focus on the four pillars of governance, economics, peace and reconciliation, and security, was a welcome step in the right direction. However, the committee is disappointed by the lack of transparency provided by the Department of Defense and the Department of State on the central tenants of the Compact and the associated benchmarks. Therefore, the Committee directs the Department of Defense, in coordination with the Department of State, to provide a briefing to the committee on the Compact, including the benchmarks and associated timelines, no later than October 31, 2018.

The committee understands that the Combined Security Transition Command-Afghanistan (CSTC–A) conducted a tactical wheeled vehicle (TWV) optimization study in 2016 in support of the Afghan National Defense and Security Forces with a focus on creating a sustainable, affordable, and effective fleet to increase combat capability and force protection for occupants. The committee would like to understand how this study has informed procurement decisions for TWV in the ASFF. Therefore, the committee directs the Secretary of Defense to provide a briefing to Armed Services Committee of the Senate not later than October 31, 2018, on the results of the TWV study, including the types of vehicles considered in the

study; their respective cost, operational survivability, and sustainability; and how the results of the study are reflected in ASFF procurements.

**Extension and modification of authority for reimbursement of certain coalition nations for support provided to United States military operations (sec. 1212)**

The committee recommends a provision that would extend the authority to make Coalition Support Fund (CSF) reimbursements under section 1233 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181), as amended, through fiscal year 2019 and would limit the total amount of reimbursements that may be provided in fiscal year 2019 to \$350.0 million. Under this provision, the Secretary of Defense may use Coalition Support Funds to reimburse certain nations for support provided to or in connection with U.S. military operations in Afghanistan, Iraq, and Syria. This authority may only be used with regard to Pakistan pursuant to section 1226 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended by this Act.

The committee recognizes that stability in the South Asia region cannot be achieved without stability in Pakistan and that engaging with the Government of Pakistan in order to ensure a strong, stable, and secure nation is consistent with the national security goals of the United States. The relationship between the United States and Pakistan, however, is under significant strain. Cooperation in key areas, to include counterterrorism, has fallen short of expectations and has, in some cases, run counter to U.S. national security interests and regional stability. The committee recognizes that there are a number of areas in which U.S. and Pakistani national security interests converge and that it is important to continue to seek methods and processes by which coordination and cooperation can occur in transparent and mutually beneficial ways. Therefore, the committee recommends the provision of CSF reimbursements for a set of narrowly defined, measurable border security activities under the conditions set forth in section 1226 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended by this Act, in the hope that such efforts may provide a productive framework for continued U.S.-Pakistani engagement in the future.

**Extension of authority to transfer defense articles and provide defense services to the military and security forces of Afghanistan (sec. 1213)**

The committee recommends a provision that would extend through December 31, 2019, the authority under section 1222 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112–238), as most recently amended by section 1212 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–125), to transfer defense articles being drawn down in Afghanistan and to provide defense services in connection with such transfers to the military and security forces of Afghanistan. The provision would also extend through fiscal year 2019 the exemption for excess defense articles (EDA) transferred from Department of Defense stocks in Afghanistan from counting toward the annual

limitation on the aggregate value of EDA transferred under section 516 of the Foreign Assistance Act of 1961 (Public Law 87–195).

**Modification of reporting requirements for special immigrant visas for Afghan allies program (sec. 1214)**

The committee recommends a provision that would renew a reporting requirement under the Afghan Allies Protection Act of 2009 to assess the health of the Special Immigrant Visa (SIV) application process and identify any delays in orderly visa processing. Afghan allies work with the United States and coalition partners, often at great personal risk and sacrifice. Sustaining support from Afghan individuals willing to partner with the U.S. Government is critical to the mission in Afghanistan. The committee is concerned by reports that the SIV application process may be hampered by a breakdown in interagency coordination resulting in undue delay, needless stress on applicants, and a sizable drop in SIV admissions during the first and second quarters of fiscal year 2018.

**Subtitle C—Matters Relating to Syria, Iraq, and Iran**

**Extension of authority to provide assistance to counter the Islamic State of Iraq and Syria (sec. 1221)**

The committee recommends a provision that would extend the authority under section 1236 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291) until December 31, 2020.

The recommended provision would also limit the obligation and expenditure of more than \$450.0 million of the funds available for activities under the section 1236 authority until the Secretary of Defense submits to the congressional defense committees a report that describes the roles, missions, and responsibilities of any future U.S. military presence in Iraq, provides information on anticipated funding requirements, and provides a transition plan for operational sustainment activities of the Iraqi Security Forces (ISF) for fiscal years after fiscal year 2019.

The committee recognizes the significant progress and achievements of the ISF in the campaign against the Islamic State of Iraq and Syria (ISIS), including the recapture of numerous ISIS strongholds. Furthermore, the committee supports continued engagement and cooperation with the ISF and the Government of Iraq to secure these gains via the ISF’s continued pursuit of remaining ISIS elements, enhanced border security, stabilization of liberated areas, and the promotion of equitable governance. In light of ISIS’s gains in the wake of the withdrawal of U.S. forces from Iraq in 2011, the committee seeks greater clarity from the Department of Defense (DOD) on the requirements for an enduring U.S. military presence in Iraq to prevent a similar resurgence in the future. The committee also seeks greater clarity from DOD on future plans to support the ISF given its growing capabilities and status as the sole legitimate security guarantor in Iraq.

The committee notes that despite progress on the battlefield, ISIS continues to pose a security threat to Iraq, including the Iraqi Sunni, Shia, and Kurdish communities and religious and ethnic minorities in Iraq, and to the stability of the Middle East more broad-

ly. The committee also recognizes that the lasting defeat of ISIS and ongoing stabilization efforts are critical to maintaining an Iraq in which all faiths, sects, and ethnicities are afforded equal protection and full integration into society. The committee believes that the United States, in coordination with coalition partners, should continue necessary support to Iraqi security forces with a national security mission in their fight against ISIS. The committee notes that Iraqi security forces with a national security mission may include Kurdish, Shia, and Sunni tribal elements, as well as other security forces that are committed to protecting highly vulnerable ethnic and religious communities, such as Yazidi, Christian, Assyrian, and Turkoman, against the ISIS threat. As requirements are identified and validated, the committee urges the department to provide security assistance to such forces serving a national security mission in an expeditious and responsive manner.

**Extension and modification of authority to provide assistance to the vetted Syrian opposition (sec. 1222)**

The committee recommends a provision that would extend section 1209 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291), as most recently amended by section 1223 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), through December 31, 2019. The provision would also limit the obligation or expenditure of funds for activities under section 1209 until the President submits the report on United States strategy required under section 1221 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) and the Secretary of Defense submits a detailed report to the congressional defense committees describing the intended use of this authority during fiscal year 2019, including the forces to be trained and equipped, for what purposes, and the planned level of engagement between such forces and U.S. personnel. Lastly, the provision would require the Secretary of Defense to submit a certification every 120 days related to the activities conducted by partner forces trained and equipped under this authority.

The committee is deeply concerned by the lack of clarity and conflicting messages from administration officials related to the Middle East and, specifically, Syria. The committee recognizes the significant progress made by the U.S. and our partners against the Islamic State of Iraq and Syria (ISIS) in Syria, including the liberation of nearly all territory previously held by the group, but the committee believes that the activities of the U.S. military in Syria are not adequately integrated into a broader strategy designed to stabilize Syria and address the factors that gave rise to ISIS. The committee notes that the influence of Russia and Iran have expanded in Syria at the expense of American interests and that General Joseph L. Votel, Commander of U.S. Central Command, testified on March 13, 2018, that the Assad regime is “ascendant.” Simultaneously, the United States’ support for some partner forces in Syria has created significant tension with Turkey, a North Atlantic Treaty Organization ally.

The committee notes that the President’s Fiscal Year 2019 Budget Request includes \$300 million to continue the training and

equipping of vetted opposition forces in Syria, yet the President has publicly expressed his intent to remove U.S. forces from Syria in the near future. This inconsistency, paired with the administration's failure to submit the report on the United States strategy for Syria required by section 1221 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), inhibit the committee's ability to sufficiently consider the continuation of this authority for fiscal year 2019. Therefore, the committee urges the administration to promptly provide details necessary for the Congress to adequately evaluate the requirement for this authority and how it contributes to the accomplishment of U.S. objectives in Syria.

**Extension and modification of authority to support operations and activities of the Office of Security Cooperation in Iraq (sec. 1223)**

The committee recommends a provision that would extend the authority for the Office of Security Cooperation in Iraq (OSC-I) for one year. The provision would also limit the obligation or expenditure of more than 25 percent of funds available for fiscal year 2019 pending the submission of the report on the United States strategy in Iraq required by the Joint Explanatory Statement on the National Defense Authorization of Fiscal Year 2018 (Public Law 115-91) and a plan for normalization of the Office of Security Cooperation in Iraq to conform to other similar embassy-based entities, including the transition of funding from the Department of Defense to the Department of State by the beginning of fiscal year 2020. The committee notes that the transition plan submitted by the Secretary of Defense pursuant to the Joint Explanatory Statement accompanying the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) failed to provide the level of detail required.

Furthermore, the committee directs the Comptroller General of the United States to submit to the congressional defense and foreign relations committees a report, not later than September 1, 2018, that addresses the following: (1) A description of OSC-I's mission and how it relates to the missions of other U.S. military personnel in Iraq, including those operating under the command of Combined Joint Task Force-Operation Inherent Resolve; (2) A description of activities undertaken by OSC-I to date; (3) An assessment of OSC-I's capabilities to perform defense institution building activities; (4) An evaluation of whether Department of Defense goals, objectives, plans, and guidance for executing security cooperation programs in Iraq through OSC-I are sufficient; (5) An evaluation of the efficacy of OSC-I's organizational and funding model compared to models of other offices of security cooperation; (6) An assessment of the adequacy of the plan to transition activities funded by the Department of Defense under OSC-I to other departments and agencies required by the Joint Explanatory Statement accompanying the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328); and (7) Any other matters deemed relevant by the Comptroller General.

**Syria Study Group (sec. 1224)**

The committee recommends a provision that would establish a Syria Study Group tasked with providing a report with findings and recommendations on the military and diplomatic strategy of the United States with respect to the conflict in Syria. The Syria Study Group would submit the report not later than June 30, 2019, to the President, the Secretary of Defense, the Committee on Armed Services and the Committee on Foreign Relations of the Senate, the Committee on Armed Services and the Committee on Foreign Affairs of the House of Representatives, the majority and minority leaders of the Senate, the Speaker of the House of Representatives, and the minority leader of the House of Representatives.

**Modification of annual report on military power of Iran (sec. 1225)**

The committee recommends a provision that would add additional elements to the annual report on the military power of Iran required under section 1245 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84), to include information on the Government of Iran’s military cooperation with the Russian Federation, support to the Houthis in Yemen, and its involvement in the trafficking of weapons and weapons systems to certain countries.

**Subtitle D—Matters Relating to Europe and the Russian Federation****Extension of limitation on military cooperation between the United States and the Russian Federation (sec. 1231)**

The committee recommends a provision that would extend through fiscal year 2019 section 1232 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), which prohibits funds authorized to be appropriated for the Department of Defense from being used for bilateral military-to-military cooperation between the United States and the Russian Federation without certain certifications by the Secretary of Defense, made in coordination with the Secretary of State, or unless certain waiver conditions are met. The provision would also clarify that the limitation shall not be construed to limit bilateral military-to-military dialogue between the United States and the Russian Federation for the purposes of reducing the risk of conflict.

**Limitation on availability of funds relating to sovereignty of the Russian Federation over Crimea (sec. 1232)**

The committee recommends a provision that would prohibit funds authorized to be appropriated or made available by this Act for fiscal year 2019 for the Department of Defense to implement any activity that recognizes the sovereignty of the Russian Federation over Crimea.

**Extension of Ukraine Security Assistance Initiative (sec. 1233)**

The committee recommends a provision that would extend through December 31, 2021 the authority under section 1250 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) as amended by section 1234 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) for the Secretary of Defense, in coordination with the Secretary of State, to provide security assistance, including defensive lethal assistance, and intelligence support to military and other security forces of the Government of Ukraine. The provision would authorize the use of up to \$200.0 million in fiscal year 2019 to provide security assistance to Ukraine.

The committee continues to believe that defense institutional reforms are critical to sustaining capabilities developed using security assistance provided under this and other authorities. Therefore, the provision would prohibit the obligation or expenditure of 50 percent of the funds available in fiscal year 2019 under this authority until the Secretary of Defense, in coordination with the Secretary of State, certifies that Ukraine has taken substantial action to make defense institutional reforms. With respect to the certification on Ukrainian defense institutional reforms, the committee encourages the Secretary of Defense to consider, among other factors, whether the Government of Ukraine has enacted legislation that ensures a solid legal basis for the implementation of defense reforms consistent with Ukraine’s Strategic Defense Bulletin.

The committee also encourages the Secretary of Defense to consider, as part of the certification process, defense institutional reforms that promote more efficient use of defense resources, which will ultimately enable a more effective defense of Ukraine’s sovereignty and territorial integrity and allow Ukraine to achieve its full potential as a strategic partner of the United States. Therefore, the committee urges the Department of Defense to encourage the Ministry of Defense of Ukraine to institutionalize a formal internal control measures program and a risk management framework to identify, prioritize, report, and mitigate operational and financial risk before it impairs the strategic objectives of the Armed Forces of Ukraine.

The committee also urges the Department of Defense to encourage Ukroboronprom, Ukraine’s state defense concern, to initiate an audit of its financial statements and a corporate governance review that are in strict accordance with international auditing and accounting standards.

The committee recognizes that fulfilling the promises of the Euromaidan and achieving stability, security, and prosperity for all Ukrainians ultimately depends on effectively countering corruption. The committee commends the efforts of the National Anti-Corruption Bureau of Ukraine (NABU), and encourages the Government of Ukraine to ensure NABU and other anti-corruption institutions in Ukraine are fully supported, resourced, and defended. The committee also urges the Government of Ukraine to establish an independent anti-corruption court in line with the recommendations of the Venice Commission. While the committee welcomes the establishment of Ukraine’s electronic asset declaration system as an im-

portant step for greater transparency, the committee encourages the Government of Ukraine to take appropriate actions to ensure this system does not place unnecessary burdens or pressure on civil society, especially those individuals dedicated to achieving greater transparency and accountability in Ukraine.

The committee remains deeply concerned by the continuing aggression of Russia and Russian-led separatist forces in Ukraine. The committee welcomes the delivery of Javelin Missiles and Javelin Command Launch Units to Ukraine, which sends a strong signal of the United States' commitment to the defense of allies and partners. The committee continues to emphasize the importance of providing security assistance and intelligence support, including defensive lethal assistance, to the Government of Ukraine to build its capacity to defend its sovereignty and territorial integrity.

**Sense of Senate on relocation of Joint Intelligence Analysis Complex (sec. 1234)**

The committee recommends a provision that would express the sense of the Senate that in consideration of any future plans, including the conduct of any analysis of alternatives, regarding the relocation of U.S. European Command's Joint Intelligence Analysis Complex, the Secretary of Defense should maintain its geographic location within the United Kingdom and its collocation with the North Atlantic Treaty Organization (NATO) Intelligence Fusion Center.

**Sense of Senate on enhancing deterrence against Russian aggression in Europe (sec. 1235)**

The committee recommends a provision that would express the sense of the Senate that in order to protect the national security of the United States, it is the policy of the United States to pursue an integrated approach to strengthening the defense of allies and partners in Europe as part of a broader strategy backed by all elements of United States power to deter and, if necessary, defeat Russian aggression. The provision would also express the sense of the Senate that in order to do so, the Secretary of Defense, in coordination with the Secretary of State and in consultation with the Commander, U.S. European Command, should consider specific steps to improve U.S. combat capability and capacity in Europe, increase U.S. forward presence in Europe, maintain robust security assistance for allies and partners in Europe, promote reforms within the North Atlantic Treaty Organization (NATO), and enhance multilateral security cooperation among U.S. partners and allies, including between NATO and the European Union.

The provision would primarily address activities to be conducted by the Secretary of Defense related to conventional deterrence. However, the committee recognizes that a comprehensive strategy to deter Russian aggression requires a whole-of-government approach, and must address Russian malign influence activities, which pose an urgent threat to democratic institutions, including in the United States, and to stability in Europe.

The committee believes a comprehensive, integrated approach to strengthen the capabilities of allies and partners in Europe to deter and defend against the Russian hybrid threat is urgently needed.

Russian aggression utilizing the full spectrum of national power threatens our most vulnerable European allies and partners and continues to result in harm to civilians, the suppression of human rights, loss of faith in democracy, and the undermining of the sovereignty of Russia's neighbors. In particular, the committee condemns the ongoing Russian violations of the territorial integrity of Georgia over Abkhazia and South Ossetia, and Ukraine over Crimea and Donbass.

Not later than March 1, 2019, the Under Secretary of Defense for Policy shall provide a briefing to the congressional defense committees on the Department of Defense's strategy for enhancing deterrence against Russian aggression by strengthening the defense of allies and partners in Europe, including the Department's consideration and/or implementation of the specific steps described in the provision.

**Technical amendments related to NATO Support and Procurement Organization and related NATO agreements (sec. 1236)**

The committee recommends a provision that would revise section 2350d of title 10, United States Code and section 2761(e)(3) of title 22, United States Code to reflect the current North Atlantic Treaty Organization (NATO) organizational structure and would permit NATO agency reform processes to apply U.S. statutory provisions to the updated NATO organization.

**Report on security cooperation between the Russian Federation and Cuba, Nicaragua, and Venezuela (sec. 1237)**

The committee recommends a provision that would direct the Director of the Defense Intelligence Agency to submit a report not later than 180 days after the date of enactment of this Act on security cooperation between the Russian Federation and Cuba, Nicaragua, and Venezuela to the appropriate congressional committees.

**Sense of Senate on countering Russian malign influence (sec. 1238)**

The committee recommends a provision that would express the sense of the Senate that the Secretary of Defense and the Secretary of State should urgently prioritize the completion of a comprehensive strategy to counter Russian malign influence and submit to Congress the report required by section 1239A of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91).

Russian aggression below the level of direct military conflict continues to be an immediate and urgent threat to the United States, its allies, and partners. The Senate Select Committee on Intelligence recently confirmed the unanimous assessment of the intelligence community in January 2017 that "Russian President Vladimir Putin ordered an influence campaign in 2016 aimed at the US presidential election." In February 2018, then-Director of Central Intelligence Michael Pompeo testified that, with regard to Russian interference in the 2018 mid-term elections, "[W]e have seen Russian activity and intentions to have an impact on the next election cycle here." Director of National Intelligence Daniel Coats testified at that same hearing that Russia "will conduct bolder and more

disruptive cyber operations during the next year” and that Russia “will work to use cyber operations to achieve strategic objectives unless they face clear repercussions for their cyber operations.”

The actions that the U.S. Government has taken to date have not succeeded in deterring Russia from engaging in asymmetric aggression. In February of this year, then-Commander, U.S. Cyber Command, Admiral Michael Rogers, testified that “President Putin has clearly come to the conclusion there’s little price to pay here.” In addition, then-National Security Adviser H.R. McMaster said in April 2018 with respect to Russia, “We have failed to impose sufficient costs.”

The committee is concerned that the U.S. government continues to lack a unified, whole-of-government strategy to impose real costs on Vladimir Putin and his regime in order to deter future Russian malign aggression. In March 2018, Commander, U.S. European Command, General Curtis Scaparrotti, testified, “I don’t believe there’s an effective unification across the interagency with the energy and the focus that we could attain.” The absence of a comprehensive strategy persists despite the requirement under section 1239A of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) for the Secretary of Defense and Secretary of State to develop and report to Congress on such an approach. The strategy must be coordinated at the highest levels of government and integrate all tools of national power, bringing together military, diplomatic, cyber, informational, financial, and economic measures to counter Russian malign influence.

The committee urges the Secretary of Defense and Secretary of State to dedicate all necessary resources to complete the strategy and submit the required report without delay.

#### **Subtitle E—Matters Relating to the Indo-Pacific Region**

##### **Redesignation, expansion, and extension of Southeast Asia Maritime Security Initiative (sec. 1241)**

The committee recommends a provision that would amend section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) to: redesignate the Southeast Asia Maritime Security Initiative as the Indo-Pacific Maritime Security Initiative; add Bangladesh and Sri Lanka as recipient countries of assistance and training; add India as a covered country eligible for payment of certain incremental expenses; and extend the authority under the section through December 31, 2025.

The committee continues to strongly support efforts under the Southeast Asia Maritime Security Initiative aimed at enhancing the capabilities of regional partners to more effectively exercise control over their maritime territory and to deter adversaries. The committee is encouraged by the progress that has been made under the initiative, and notes that to date, the Department of Defense has utilized the authority under section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended, to support specified partner capacity-building efforts in the region, to include the provision of training, sustainment support, and participation in multilateral engagements. The committee recognizes that the initiative was designed to support a long-term

capacity building effort, which will require increased resources in future years as requirements are established and refined, as programs mature, and as the regional security environment continues to evolve.

The committee believes the Department's efforts to improve maritime domain awareness and maritime security should be fully integrated into a U.S. strategy for a free and open Indo-Pacific. Therefore, the committee supports redesignating the authority under section 1263 as the Indo-Pacific Maritime Security Initiative, the inclusion of Bangladesh and Sri Lanka as recipient countries, and the addition of India as a covered country to encourage its participation in regional security initiatives of this kind. Furthermore, as a demonstration of the United States' commitment to allies and partners in the region, the committee supports the extension of the Indo-Pacific Maritime Security Initiative through the end of 2025.

Beyond the Indo-Pacific Maritime Security Initiative, the committee encourages the Department to make use of the full complement of security cooperation authorities available to the Department, particularly those under section 1241 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328), to enhance the capabilities of foreign security partners in South and Southeast Asia to protect mutual security interests.

**Modification of annual report on military and security developments involving the People's Republic of China (sec. 1242)**

The committee recommends a provision that would amend section 1202(b) of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65), and modify the annual report on military and security developments involving the People's Republic of China.

While significant attention has been focused on Russian malign influence in recent years, the committee is also concerned by China's increasingly active influence operations, which exploit the openness of democratic systems, including in the United States. Therefore, among other elements that would be added to the matters included in the annual report for analyses and forecasts, the provision would add efforts by China to influence the media, cultural institutions, business, and academic and policy communities of the United States to be more favorable to its security and military strategy and objectives.

The committee recognizes that the Department of Defense (DOD) is not the agency primarily responsible for countering Chinese malign influence in the United States. However, the committee encourages the Secretary of Defense to examine how DOD can make appropriate use of existing authorities and resources to support interagency efforts to counter Chinese malign influence. For example, the committee is concerned about China's use of Confucius Institutes—which are under the supervision of Hanban, a Chinese state agency—as a tool of malign influence at American universities. Multiple reports by academic organizations have highlighted the threat to academic freedom and open debate posed by Confucius Institutes, and have called on universities to terminate or substantially renegotiate agreements with Hanban. In order to protect free

inquiry and free expression, the Secretary of Defense could examine whether DOD should terminate research and development partnerships with universities that fail to terminate or substantially renegotiate agreements with Hanban.

**Sense of Senate on Taiwan (sec. 1243)**

The committee recommends a provision that would express the sense of the Senate on the importance of a strong U.S. defense relationship with Taiwan.

**Redesignation and modification of sense of Congress and initiative for the Indo-Asia-Pacific region (sec. 1244)**

The committee recommends a provision that would amend section 1251 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) by redesignating the “Indo-Asia-Pacific Stability Initiative” as the “Indo-Pacific Stability Initiative” and making modifications to emphasize the initiative’s alignment with the National Defense Strategy and its focus on minimizing the risk of executing the contingency plans of the Department of Defense. The provision would also require the Secretary of Defense, in consultation with the Commander, United States Pacific Command, to submit a future years plan on activities and resources of the initiative no later than March 1, 2019.

**Prohibition on participation of the People’s Republic of China in Rim of the Pacific (RIMPAC) naval exercises (sec. 1245)**

The committee recommends a provision that would prohibit the Secretary of Defense from enabling or facilitating the participation of the People’s Republic of China in any Rim of the Pacific (RIMPAC) naval exercise unless the Secretary certifies to the congressional defense committees that China has ceased all land reclamation activities in the South China Sea, removed all weapons from its land reclamation sites, and established a consistent 4-year track record of taking actions toward stabilizing the region.

**Assessment of and report on geopolitical conditions in the Indo-Pacific region (sec. 1246)**

The committee recommends a provision that would require, not later than 90 days after the date of the enactment of this Act, the Secretary of Defense to select and enter into an agreement with an entity independent of the Department of Defense to conduct an assessment of the geopolitical conditions in the Indo-Pacific region that are necessary for the successful implementation of the National Defense Strategy. At a minimum, the provision would require the assessment to address the geopolitical conditions in the Indo-Pacific region, including any change in economic and political relations, that are necessary to support United States military requirements for forward defense, extensive forward basing, and alliance formation and strengthening. The provision would require that the independent entity selected submit a report on the results of the assessment to the appropriate congressional committees not later than 270 days after the date of the enactment of this Act.

The committee has emphasized the importance of translating strategy into force capabilities and posture through the budgeting and acquisition processes within the Department of Defense. It is equally important and necessary to examine the requirements that military strategy imposes on diplomacy and other activities of the government as a whole. A military strategy that relies on heavier forward deployment and expanded basing structures and access could foreseeably require significant changes in relations with nations in the region, which has implications for U.S. policy concerning trade, security assistance, foreign aid, economic investment, and diplomacy. Likewise, broadening and deepening alliances may require changes in military strategy. For example, alliance credibility and cohesion in the Indo-Pacific region could necessitate that the United States commit to a robust forward defense in the Indo-Pacific region, which would require that U.S. and allied air, naval, and ground forces would have to develop capabilities and concepts of operations to survive and operate within the range of ballistic and cruise missiles.

**Sense of Senate on United States-India defense relationship (sec. 1247)**

The committee recommends a provision that would express the sense of the Senate that the United States should strengthen and enhance its major defense partnership with India and work toward mutual security objectives.

**Sense of Senate on strategic importance of maintaining commitments under Compacts of Free Association (sec. 1248)**

The committee recommends a provision that would express the sense of the Senate that maintaining the commitments of the United States under the Compacts of Free Association is of vital strategic importance to the national security interests of the United States.

The committee notes that under compacts with the Freely Associated States (FAS), the Federated States of Micronesia, Republic of the Marshall Islands, and Palau, the U.S. has exclusive military use rights in these countries in exchange for the defense of the FAS. These territories were once used by the U.S. for nuclear weapons testing, and, according to the Department of Defense, the compacts have enabled it to maintain critical access in the Indo-Pacific region. Therefore, the United States' Compacts of Free Association (COFA) are critical to strengthening partnerships and maintaining commitments in the Indo-Pacific Theater. It is the sense of the Senate that these partnerships and commitments are of vital strategic importance to the national security interests of the United States.

**Sense of the Senate on United States military forces on the Korean Peninsula (sec. 1249)**

The committee recommends a provision that would express the sense of the Senate that the presence of United States military forces on the Korean Peninsula and across the Indo-Pacific region continues to play a critical role in safeguarding the peaceful and

stable rules-based international order. The provision would also express that the significant removal of United States military forces from the Korean peninsula is a non-negotiable item as it relates to the complete, verifiable, and irreversible denuclearization of the Democratic People's Republic of Korea.

#### **Subtitle F—Reports**

##### **Report on military and coercive activities of the People's Republic of China in the South China Sea (sec. 1251)**

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Secretary of State, to submit to the congressional defense committees and release to the public, a report on the military and coercive activities of China in the South China Sea in connection with such activity immediately after the commencement of any significant reclamation or militarization activity by the People's Republic of China in the South China Sea, including any significant military deployment or operation or infrastructure construction.

The committee is concerned that sufficient information has not been made publicly available in a timely fashion regarding China's reclamation and militarization activities of China in the South China Sea. Therefore, the committee urges the Secretary of Defense to determine that the public interest in selective declassification of China's activities in the South China Sea outweighs the potential damage from disclosure. The Secretary should consider mandating that the directors of National Geospatial-Intelligence Agency and the Defense Intelligence Agency provide the Bureau of Intelligence and Research (INR) at the State Department with declassified aircraft-generated imagery and supporting analysis describing Chinese activities of concern. The committee also urges that the State Department brief and distribute the reports to the media and throughout Southeast Asia.

##### **Report on terrorist use of human shields (sec. 1252)**

The committee recommends a provision that would direct the Secretary of Defense, in consultation with the Secretary of State, to submit a report to the appropriate congressional committees not later than 180 days after the enactment of this Act, on the use of human shields by terrorist groups to protect otherwise lawful targets from attack and efforts to incorporate lessons learned to address the challenge posed by the use of human shields.

##### **Report on Arctic strategies (sec. 1253)**

The committee recommends a provision that would require the Secretary of the Army, the Secretary of the Navy, and the Secretary of the Air Force not later than 180 days after the enactment of this Act to submit to the congressional defense committees a report on the strategy of the Army, Navy, the Marine Corps, and the Air Force for the Arctic region. The committee recognizes that the Arctic is a region of growing strategic importance to the national security interest of the United States and that the Secretary of Defense should improve the posture and capabilities of the Department of Defense to meet the growing array of challenges in the re-

gion, with a particular focus on the People's Republic of China and the Russian Federation.

**Report on permanent stationing of a United States Army brigade combat team in the Republic of Poland (sec. 1254)**

The committee recommends a provision that would require not later than March 1, 2019, that the Secretary of Defense, in coordination with the Secretary of State, submit to the congressional defense committees a report on the feasibility and advisability of permanently stationing a United States Army brigade combat team in the Republic of Poland.

**Reports on nuclear capabilities of the Democratic People's Republic of Korea (sec. 1255)**

The committee recommends a provision that would require, not later than 60 days after the enactment of this Act, the Secretary of Defense, in coordination with the Director of National Intelligence, to submit to the appropriate committees a report on the status of the nuclear program of the Democratic People's Republic of Korea to establish a baseline of progress for negotiations with respect to denuclearization. The provision would require, in the case of an agreement between the United States and the Democratic People's Republic of Korea, the Secretary of Defense to submit a written update to the required baseline report not later than 60 days after the date on which the agreement is reached and every 90 days thereafter.

The provision would also require, not later than 180 days after the date on which the baseline report is submitted and every 180 days thereafter, that the written update to the baseline report include: (1) an assessment of the establishment of safeguards, other control mechanisms, and other assurances secured from the Democratic People's Republic of Korea to ensure its activities permitted under any agreement will not be used to further any nuclear-related military or nuclear explosive purpose, including research on or development of a nuclear explosive device; and (2) an assessment of the capacity of the United States or an international organization, including the International Atomic Energy Agency, to effectively access and investigate suspicious sites in the Democratic People's Republic of Korea or allegations of covered nuclear-related activities, including storage sites for nuclear weapons.

**Report on United States military training opportunities with allies and partners in the Indo-Pacific region (sec. 1256)**

The committee recommends a provision that would express the sense of the Senate that the Secretary of Defense should continue to place emphasis on United States military training exercises with allies in the Indo-Pacific region. The provision would also require that, not later than 180 days after the date of the enactment of this Act, the Secretary of Defense submit to the congressional defense committees a report on future United States military training opportunities with allied partner countries in the Indo-Pacific region.

**Subtitle G—Others Matters****Modification of authorities relating to acquisition and cross-servicing agreements (sec. 1261)**

The committee recommends a provision that would amend section 2342 of title 10, United States Code, to prohibit the use of acquisition and cross-servicing agreements (ACSAs) to facilitate transfers of logistics support, supplies, and services to third-party countries or organizations and clarify that ACSAs may not provide for, or otherwise constitute by itself a commitment for, the introduction of U.S. Armed Forces into hostilities. The provision would also require the Secretary of Defense to submit an annual report on the Department's use of the authority to the appropriate committees of Congress.

The committee acknowledges the value of ACSAs with an array of partners, including North Atlantic Treaty Organization allies, parties to bilateral and collective defense treaties and agreements with the United States, and the wide array of partners with which the United States cooperates. Such agreements provide the Department of Defense with flexibility, access, and support on the basis of full reciprocity in numerous regions around the world in the furtherance of U.S. national security interests. ACSAs may also help to enhance readiness at minimal cost and increase military effectiveness by allowing partners and allies to practice mutual support procedures during military exercises.

However, the committee is concerned that the Department has not kept Congress adequately informed of new ACSAs being signed with non-NATO member countries or provided sufficient information with respect to how the Department is ensuring that U.S.-provided logistics support, supplies, and services are being fully reimbursed on a reciprocal basis. Therefore, the committee directs the Comptroller General of the United States to submit a report to Congress, no later than November 1, 2018, that evaluates the use of ACSAs by the Department of Defense (DOD), including: (1) A list of current ACSAs signed by the United States; (2) The criteria and processes used by DOD to determine the need for ACSAs with allies and partners; (3) The extent to which DOD is complying with the requirements of section 2342 of title 10, United States Code, to account for support provided under ACSAs and receive reciprocal support or reimbursements from partner nations; (4) The extent to which DOD has complied with the requirement of section 2342 of title 10, United States Code, to notify Congress of their intent to sign an ACSA with a non-NATO member country; (5) Any known instances of DOD's use of ACSAs as mechanisms for transfers of logistics support, supplies, and services to third-party countries for which there is no ACSA currently in place; (6) Recommendations for improving DOD's administration of the ACSA authority; and (7) Any other matters deemed relevant by the Comptroller General.

**Extension of authority for transfer of amounts for Global Engagement Center (sec. 1262)**

The committee recommends a provision that would extend for one year the transfer authority contained in section 1287(e)(1) of

the National Defense Authorization Act for Fiscal Year 2017 relating to the Global Engagement Center (GEC).

The committee strongly supports the mission of the GEC to counter false and misleading messaging by both state and non-state adversaries and notes the importance of integrating military and nonmilitary tools of statecraft to address these challenges. The committee believes continuation of the transfer authority provided by this provision helps to facilitate such whole-of-government approaches.

The committee notes that the Departments of State and Defense signed a memorandum of understanding on February 26, 2018, to facilitate the transfer of \$40.0 million for the purposes of countering propaganda and disinformation from foreign nations, more than a year after such transfers were authorized by the National Defense Authorization Act for Fiscal Year 2017 and after the Intelligence Community publicly reported Russian efforts to influence the 2016 elections. The committee has significant concern about delayed action on these issues in the face of a significant and growing threat from Russia. The committee strongly encourages the Departments of State and Defense to fully utilize the authorities that have been provided to more aggressively counter propaganda by Russia and other state and non-state actors.

**Sense of Senate on purchase by Turkey of S-400 air defense system (sec. 1263)**

The committee recommends a provision that would express the sense of the Senate that the President should impose and apply sanctions under the Countering America's Adversaries through Sanctions Act (Public Law 115-44) against the Republic of Turkey if it purchases the S-400 air defense system from the Russian Federation.

The Republic of Turkey is a North Atlantic Treaty Organization (NATO) ally and critical strategic partner of the United States. The committee recognizes that the United States-Turkey alliance remains essential for deterring and countering Russian aggression, countering Iranian malign influence, and combating terrorism, all of which are priorities of the new National Defense Strategy. Moreover, the primary beneficiaries of any rupture in the United States-Turkey alliance would be Russia and Iran. Thus, the committee urges the administration to continue working with the Government of Turkey to develop cooperative approaches to shared challenges, including counterterrorism cooperation concerning the Kurdistan Workers' Party (PKK), defeating ISIS, the situation in Syria, NATO posture and activities in the Black Sea, and countering Iranian malign influence, among others.

However, the committee remains concerned about a number of issues, which threaten to undermine the foundation for a strong and sustainable United States-Turkey alliance. For example, Turkey's purchase of the S-400 air defense system from the Russian Federation would be incompatible with Turkey's commitments as a NATO ally. Not only would the purchase put billions of dollars into the Russian military industrial complex and give more profits to Vladimir Putin's corrupt network of kleptocrats, it would subsidize Russian aggression on Turkey's periphery, including in Syria and

Ukraine. The committee urges the Government of Turkey to abandon any plans for the purchase of the S-400 air defense system from the Russian Federation. At the same time, the committee urges the administration to work with the Government of Turkey to identify alternatives to the S-400 air defense system that meet Turkey's defense requirements.

Beyond defense, there are other concerning issues that have a negative impact on United States-Turkey relations. The committee has serious concerns about cases against U.S. citizens who have been arrested under Turkey's state of emergency, including Pastor Andrew Brunson, and calls for their immediate release. The committee also remains disturbed by the violence that took place outside the Turkish ambassador's residence in Washington, D.C. on May 16, 2017, and believes the perpetrators should be brought to justice under United States law. More broadly, the committee is concerned by indications of deteriorating respect for human rights and the rule of law in Turkey. As an important member of NATO, the committee calls on the Government of Turkey to uphold its obligations under the North Atlantic Treaty, which commits NATO allies to "safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law."

**Department of Defense support for stabilization activities in national security interest of the United States (sec. 1264)**

The committee recommends a provision that would authorize the Secretary of Defense, with the concurrence of the Secretary of State and in consultation with the Administrator of the United States Agency for International Development and the Director of the Office of Management and Budget, to provide certain support for the stabilization activities of other Federal agencies.

**Enhancement of U.S.-Israel defense cooperation (sec. 1265)**

The committee recommends a provision that would amend section 12001(d) of the Department of Defense Appropriations Act, 2005 (Public Law 108-287) to extend the authority for the War Reserves Stockpile Ammunition-Israel through September 30, 2023. The provision would also authorize the President, acting through the Secretary of State and the Secretary of Defense, to conduct a joint assessment of the quantity of precision guided munitions necessary for Israel to counter regional threats. The provision would also amend the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314) to require the Secretary of Defense to prescribe procedures for the rapid acquisition and deployment of supplies and associated support services urgently needed to support production of precision guided munitions.

The committee believes that the United States should continue to work closely with Israel to research, develop, and eventually procure the necessary capabilities to effectively detect, map, monitor, operate in, and neutralize underground tunnels and share successful tactics to engage in effective tunnel warfare. Therefore, not later than February 1, 2019, the committee directs the Secretary of Defense, in consultation with Israel's Ministry of Defense, to provide a report to the congressional defense committees on anti-tun-

neling cooperation with Israel, which shall include the following elements: (1) An identification of specific capability gaps of the United States, the capability gaps of Israel, and any shared capability gaps with respect to detecting, mapping, monitoring, operating in, and neutralizing underground tunnels; (2) An identification of cooperative projects that would address those capability gaps and mutually benefit and strengthen the security of the United States and Israel; (3) An assessment of the projected cost for research and development efforts and the timeline for the completion of each cooperative project; (4) An assessment of the percentage of U.S. funds for cooperative projects that could be realistically and efficiently spent in the United States; (5) An identification of anti-tunnel capability gaps of the United States not likely to be addressed through cooperative projects; and (6) An assessment of the projected costs for procurement and fielding of jointly developed anti-tunneling capabilities.

**Certifications regarding actions by Saudi Arabia in Yemen (sec. 1266)**

The committee recommends a provision that would prohibit the expenditure of funds to provide authorized in-flight refueling to Saudi or Saudi-led coalition non-United States aircraft conducting missions in Yemen pending certifications by the Secretary of State that the Government of Saudi Arabia is taking certain actions related to the civil war in Yemen. The provision includes several exceptions and provides for a national security waiver that may be exercised by the Secretary of State.

**Sense of the Senate on support for G5 Sahel Joint Force countries (sec. 1267)**

The committee recommends a provision that would express the sense of the Senate on support for the G5 Sahel Joint Force countries.

**Sense of Congress on broadening and expanding strategic partnerships and allies (sec. 1268)**

The committee recommends a provision that would express the sense of the Senate that the United States manages multiple strategic challenges through the enduring strength of its alliances and that it remains resolved to forge new alliances and partnerships in order to address shared challenges in Europe, the Indo-Pacific, and throughout the world.

**Removal of Turkey from the F-35 program (sec. 1269)**

The committee recommends a provision that would prohibit the transfer of title for any F-35 aircraft to the Government of the Republic of Turkey until such time as the Secretary of Defense submits to the appropriate congressional committees a plan to remove the Government of the Republic of Turkey from participation in the F-35 program, to include industrial and military aspects of the program.

**Increase in minimum amount of obligations from the Special Defense Acquisition Fund for precision guided munitions (sec. 1270)**

The committee recommends a provision that would increase the amount of annual obligations from the Special Defense Acquisition Fund for the procurement and stocking of precision guided munitions from 20 percent to 25 percent.

**Items of Special Interest**

**Advise and assist efforts in Afghanistan**

In August 2017, the President announced a new South Asia strategy that was accompanied by an increase of U.S. and North Atlantic Treaty Organization (NATO) troops in Afghanistan in support of a renewed effort to advise and assist Afghan forces as part of the NATO Resolute Support Mission. As part of the increase, the Army has deployed a Security Force Assistance Brigade (SFAB), a new unit created to advise and assist foreign military forces. The development of the Afghan National Defense and Security Forces (ANDSF) has been a central element of successive U.S. strategies in Afghanistan and the Department of Defense (DOD) has utilized a variety of approaches to execute that strategy. The committee is aware of the challenges DOD has faced in prior efforts to advise and assist various ANDSF elements. For example, in 2013, the Government Accountability Office (GAO) report, "GAO-13-381 Security Force Assistance: More Detailed Planning and Improved Access to Information Needed to Guide Efforts of Advisor Teams in Afghanistan," found that advisor teams in Afghanistan needed clearer guidance regarding the end states, objectives, and milestones they were expected to achieve as well as improved access to information to guide their efforts. The GAO also discussed challenges DOD faced in fulfilling requirements for advisor personnel, including the Army's decision to use personnel from non-deployed brigade combat teams to form advisor teams. The committee remains concerned about the efficacy of U.S. advise and assist efforts in Afghanistan, particularly in light of the increased emphasis on those efforts under the new South Asia strategy. Additionally, the committee is concerned by the compressed timeline under which the first SFAB was created, trained and equipped, and deployed to Afghanistan. The committee understands that the decision to accelerate the fielding of this unit created a number of challenges, including manning shortages, the scaling back of training, and reprogramming requests for essential equipment. Accordingly, the Committee directs the Comptroller General of the United States to evaluate the following issues: (1) The extent to which DOD, in conjunction with NATO, has defined advisor team missions, goals, and objectives; (2) The extent to which advisors were trained and equipped for their specific missions in Afghanistan; (3) The ability of the Army's Security Force Assistance Brigade to meet current and future advisor requirements in Afghanistan and elsewhere; (4) What adjustments, if any, are being made to the manning, training and equipping, and deployment of the second and third SFABs; and (5) Any other issues the Comptroller General determines appropriate with respect to the advise and assist mission in Afghanistan.

The committee further directs the Comptroller General to provide a briefing to the Senate Committee on Armed Services not later than November 1, 2018 on the Comptroller General's preliminary findings and submit a report to the congressional defense committees on a date agreed to at the time of the briefing.

**Clarification of authority to waive certain expenses for activities of regional centers for security studies**

The committee notes the important contribution of the regional centers for security studies for building security cooperation with allies and partners globally. The regional centers advance U.S. security priorities by promoting multilateral dialogue on a broad spectrum of shared security issues. The United States benefits from the participation of national security leaders from partner nations in the exchange of ideas promoted by the regional centers. The committee notes that the Department of Defense is authorized to provide reimbursements for the logistical expenses associated with the participation of foreign government officials in regional center activities. However, the committee understands that there may be concerns with the processes and associated timelines for approving such reimbursements that could impact participation of foreign government officials. Therefore, the committee directs the Under Secretary of Defense for Policy, in coordination with appropriate officials from the Department of State, to provide the congressional defense committees a briefing on the authorities and procedures for making reimbursements for the logistical expenses associated with the participation of foreign government officials in regional center activities. The briefing should be provided no later than October 1, 2018.

**Defense Institute of International Legal Studies**

A key component of the Department of Defense's (DOD) efforts to build the institutional capacity of foreign security forces is defense legal institution building. Building partner security forces' legal institutional capacity serves the U.S. goals of promoting accountability, the rule of law, respect for civilian control of the military, enhancing compliance with human rights and the law of armed conflict. In this regard, the Defense Institute of International Legal Studies (DIILS) is the principal resource within the DOD security cooperation enterprise for helping to build the legal capacity of foreign security forces through mobile programs deployed globally and resident courses at Naval Station Newport in Newport, Rhode Island.

Over the last several years, the mission and activities of DIILS have expanded significantly, as U.S. forces increasingly work by, with, and through partner security forces. The Government Accountability Office (GAO) published a report on December, 2016, titled, "Rule of Law Assistance: DOD Should Assess Workforce Size of Defense Institute of International Legal Studies" (GAO-17-118), which stated that between fiscal years 2013 and 2016, DIILS assistance activities grew by nearly 50 percent, and that trend has continued. At the same time, the GAO report found that DIILS staffing during this same period had remained essentially static.

The Institute has initiated hiring in fiscal year 2018 to begin to address this staffing shortfall.

In addition, the number of resident courses offered at the Naval Station Newport has increased significantly over the last several years. In 2017, the DIILS resident course program hosted over 200 participants representing over 80 countries from all the Geographic Combatant Commands. However, the limited classroom space available to DIILS presents challenges for further expansion of resident courses to meet the growing demand.

Another important driver for DIILS's expanding mission has been the security cooperation reforms enacted in the National Defense Authorization Act for Fiscal Year 2017. The consolidated "Section 333" authority under that Act emphasizes the importance of building defense institutional capacity of friendly foreign forces, particularly at higher echelons, as part of capacity building programs. DIILS's mission of providing defense legal institution building training under Title 10 authorities currently comprises more than one third of DIILS's events, and the committee expects that this mission will continue to grow as DIILS aims to build sustained capacity in partner security forces over the long-term.

In order to ensure DIILS is appropriately resourced to meet growing requirements for defense legal institution building, the committee directs the Secretary of Defense to conduct a review of the facility requirements for DIILS at the Naval Station Newport. This review shall include consideration of the full range of options for optimizing DIILS capacity to carry out its current and expected mission, including an expanding role in defense legal institution building through both mobile and resident courses. The options shall include: (1) The impact of maintaining the status quo on DIILS ability to carry out its mission; (2) The costs and benefits of renovating the existing buildings available to DIILS for its administrative offices and classroom spaces; (3) The costs and benefits of consolidating DIILS administrative offices and classroom spaces in a newly constructed, single facility with sufficient capacity to accommodate DIILS's expanding mission; and (4) Consideration of using any other installation or facility authority deemed appropriate by the Secretary. The committee directs the Secretary to report on the findings of this review, including a recommended course of action, to the congressional defense committees not later than January 30, 2019.

### **Human rights in Burma**

The committee condemns the systematic human rights abuses committed against the Rohingya people in Burma, as well as attacks by the Arakan Rohingya Salvation Army militant group. Amid disturbing reports of widespread sexual assault and violence against women and girls, starvation, killing, and forcible deportation, nearly 700,000 men, women, and children have been forced from their homes. The committee remains concerned about role of the Burmese military in the violence and displacement inflicted on the Rohingya and other ethnic minorities in Burma.

The committee calls on the Government of Burma to: (1) Cease hostilities against the Rohingya in Burma and take proactive steps to prevent further violence; (2) Ensure the Burmese military ad-

heres to international human rights standards; (3) Carry out meaningful and comprehensive investigations of credible reports of human rights violations, including reports of conflict-related sexual and gender-based violence; (4) Take steps to hold accountable those in the Burmese military responsible for human rights violations; (5) Allow immediate and unfettered humanitarian access to communities in areas affected by conflict, including Rohingya communities in Rakhine State; and (6) Cooperate with the United Nations High Commissioner for Refugees and other relevant United Nations agencies to ensure the protection of displaced persons and the safe and voluntary return of Rohingya refugees and internally displaced persons.

The committee urges the Secretary of Defense to direct the resources necessary for ensuring full implementation of section 362 of title 10, United States Code, which prohibits the use of funds for any training, equipment, or other assistance for a unit of a foreign security force if the Secretary of Defense has credible information that the unit has committed a gross violation of human rights. The committee encourages the Secretary of Defense to alert the appropriate congressional committees if additional resources are required in order to ensure full implementation. The committee also encourages the Secretary of Defense to focus military-to-military exchanges with the Burmese military, including participation in regional humanitarian and disaster relief exercises, on human rights and necessary military reforms to promote transparency, accountability, and adherence to international human rights standards.

#### **Matters relating to Kosovo**

The committee fully supports efforts to normalize relations between Kosovo and Serbia through the European Union-led, U.S.-supported dialogue process. Normalization of relations between Kosovo and Serbia is in the interest of Kosovars and Serbs alike. Furthermore, it is vital to Kosovo and Serbia's shared European future and essential to stability in the Western Balkans.

The committee condemns the murder of Oliver Ivanovic on January 16, 2018. The committee urges the governments of Kosovo and Serbia to ensure the perpetrators of this crime are brought to justice, and to protect all those who are willing to work towards reconciliation between Kosovars and Serbs in order to improve the lives of citizens in both countries.

The committee commends Kosovo's recent passage of a border demarcation agreement with Montenegro. The committee hopes this agreement will enable Kosovo to move forward with the European Union visa liberalization process and provide incentives to advance other reforms, which are necessary to achieve Kosovo's integration into Euro-Atlantic institutions.

The committee continues to support U.S. assistance to the Kosovo Security Force as it makes the gradual transition to a multi-ethnic army for the Republic of Kosovo. The committee believes it is critical that the transformation of the Kosovo Security Forces to the Kosovo Armed Forces take place through an inclusive and transparent process that complies with Kosovo's constitution, respects the rights and concerns of all of Kosovo's citizens, pro-

notes regional security and stability, and supports Kosovo's aspirations for eventual full membership in NATO.

### **Notifications for sensitive military operations**

The committee's support for sensitive military operations rests, in part, on our ability to conduct regular and continuous oversight of those operations. Notifications from the Department are fundamental to that oversight, and they are also required by section 130f of title 10, United States Code. However, despite the Department's guidelines regarding notifications, recent notifications have been both untimely and insufficiently detailed for the committee to conduct necessary oversight. Moreover, the committee is concerned that the Department has used an exception to the reporting requirement, which was included at the Department's request, in a way that is inconsistent with congressional intent. Therefore, the committee directs the Department to comply with the following requirements for notifications of sensitive military operations going forward.

First, notifications must be timely. Section 130f of title 10, United States Code, requires written notification of a sensitive military operation within 48 hours. Yet the committee has repeatedly been notified outside that window or without the required notification in writing. Oral notifications are appreciated but are not a substitute for compliance with these statutory requirements.

Second, the Department must notify the Congress of sensitive operations in line with congressional intent. A reliance on the limited exception contained in section 130f continues to result in delayed or complete lack of notification. This is in direct conflict with congressional intent.

Third, notifications must be sufficiently detailed to allow the committee to understand the risks, benefits, and consequences of sensitive military operations. The notifications received from the Department have been increasingly vague. In order for the Congress to perform its Constitutional duties, the committee must understand the context and intent associated with Department actions. At a minimum, notifications of sensitive military operations should include the following:

- (1) The legal authority for the operation;
- (2) The objectives of the operation, including any metrics being used to grade the success of the operation in achieving those objectives;
- (3) The number and type of United States military personnel involved in the operation;
- (4) The number and type of United States military platforms involved in the operation;
- (5) The number and type of foreign partner military personnel involved in the operation, if any;
- (6) The planned duration of the operation;
- (7) The location of the operation;
- (8) A description of the reasons the operation was conducted, including a description of the threat to be addressed by the operation and the intelligence information that precipitated the operation;

(9) Whether any part of the operation was conducted without the knowledge of the country where the operation occurred or any other country with a military presence in the location the operation occurred;

(10) Whether any U.S. persons were the target of, or harmed during, the operation;

(11) A battle damage assessment of the operation, if available; and

(12) Any significant diplomatic issues or impacts on the Department's operations that resulted from the operation.

If the details described above require the notice to be classified, it should be submitted in a classified form. Classification is not a justification for omitting important details from the notice. Moreover, in the rare case that a notice contains information that the Department believes must be closely held within the committee, the Department should inform the Chairman and Ranking Member of the need for such handling. The committee, not the Department, will then determine how to handle that specific issue. The committee, not the Department, must make its own determinations about how to conduct the requisite oversight, and under no circumstances should the Department unilaterally exclude appropriately-cleared staff from receiving notifications to Congress that are required by law.

#### **Report on U.S. assistance to the Lebanese Security Forces**

The committee recognizes and commends the contributions of the Lebanese Armed Forces (LAF) and Lebanese Internal Security Forces (ISF) to the campaign against the Islamic State of Iraq and Syria, efforts to address the threat posed by other terrorist organizations, and efforts to secure Lebanon's borders in recent years. The committee also notes that U.S. assistance to the LAF is intended, in part, to enable the LAF to function as the nation's only legitimate security provider and to support the implementation of the terms of United Nations Security Council Resolution (UNSCR) 1701 as soon as practicable. A central challenge to these efforts is the persistence and influence of Lebanese Hezbollah, which actively undermines security throughout the Middle East, facilitates the Government of Iran's destabilizing agenda, and supports war crimes and acts of terror, while simultaneously acting as a significant political entity in Lebanon.

Therefore, the committee directs the Secretary of Defense, in coordination with the Secretary of State, to provide a report, not later than September 1, 2018, on U.S. assistance to the LAF and ISF. At a minimum, that report shall include: (1) A description of U.S. objectives in its support to the LAF and ISF in Lebanon and any progress made towards those objectives; (2) A description of support to the LAF and ISF since 2013 and a projection of continued support across the Future Years Defense Program; (3) An evaluation of the specific actions taken by the LAF and ISF to implement the terms of UNSCR 1701, to include descriptions of the scope and trends of LAF and ISF activities to address progress toward the disarmament of Hezbollah and other armed groups in Lebanon, the movement and establishment of Iranian or Hezbollah arms, personnel, and infrastructure in and through Lebanon through the use

of checkpoints and roadblocks, and other enforcement actions by such forces to counter related malign activities; (4) An assessment of the military, political, and economic factors impacting the ability of the LAF and ISF to enforce the terms of UNSCR 1701, as described in subsection (3) and the utilization of U.S. assistance for that purpose; (5) A description of destabilizing actions by the Government of Iran in Lebanon and trends of those actions, to include Iran's material support of Hezbollah's military and political entities, the status of Iran's influence in Lebanese institutions including any operational coordination between the Lebanese security forces, Hezbollah, and Iranian forces, any efforts by Iran to establish infrastructure for the purposes of manufacturing or storing weaponry in Lebanon, and efforts by the Government of Iran in Lebanon to threaten the interests of the United States and its allies and partners in the region; (6) An assessment of current and planned end-use monitoring protocols for U.S. security assistance to the LAF and ISF, to include detailed descriptions of Lebanese forces' adherence to those protocols and any specific instances of misuse or unauthorized transfer of U.S. assistance, if any, along with an assessment of any risk of future misuse or unauthorized transfer; and (7) Any other matters deemed relevant by the Secretary.

#### **Report on WRSA-I Stockpile Quantity Review**

The committee values the strategic alliance between the United States and Israel and supports an increase in the number of precision guided munitions (PGMs) in the War Reserve Stock Allies-Israel (WRSA-I). These munitions are intended to be utilized by the United States, but can also be used by our ally Israel, should a critical need arise where longer term procurement of specific munitions may not be an option. While the stockpile contains many valuable munitions, the committee is concerned that some critical items requiring long lead-time for development may not be readily available.

Therefore, the committee directs the Under Secretary of Defense for Policy to conduct a review of the number of PGMs needed to ensure that the United States can counter regional threats and also to collaborate with the Israeli Ministry of Defense to gauge its PGM requirements should the U.S. need to provide immediate assistance. The results from this joint assessment shall be submitted to the congressional defense committees by February 1, 2019. Included in this assessment, the Under Secretary of Defense for Policy shall outline any challenges in meeting the results of the joint assessment and provide recommendations to spur the national security industrial base toward a higher production rate.

#### **Role of Turkey in the F-35 supply chain**

The committee continues to monitor with concern the trajectory of the U.S.-Turkey relationship. The committee is aware that Turkey plans to buy a large number of F-35s and is a program partner eligible to become a supplier to the global F-35 fleet. However, the announced purchase by Turkey of the Almaz-Antey S-400 system represents the latest in a troubling series of events affecting relations between the government of Turkey and the United States.

The committee is concerned that further deterioration in the relationship between the United States and Turkey could result in disruption of cooperative programs, such as the F-35. Therefore, the committee requests that the Department of Defense provide to the congressional defense committees a briefing no later than February 1, 2019 that shall include: (1) a component-level description of the current and planned supply chain contributions of Turkey to the F-35 program, both in manufacturing and in sustainment; and (2) any components for which Turkey is a sole or majority supplier, or where the removal of components of Turkish manufacture would create significant or lasting disruption for the F-35 program.

### **United States-Mexico military cooperation**

The committee recognizes the importance of military cooperation between the United States and Mexico given their mutual national security interests, intertwined economies, and shared values. Furthermore, the committee acknowledges the Government of Mexico's significant efforts in recent years to address the challenges posed by transnational criminal organizations, narcotics and human trafficking, unauthorized migration, and securing its long, geographically complex borders. Such efforts benefit not only the United States and Mexico, but nations throughout Latin America through the disruption of illicit threat networks that further degrade internal instability, erode confidence in the governance of partner nations, and establish pathways that can be exploited by criminals and terrorist organizations.

With that in mind, the committee strongly supports the Department of State-led Mérida Initiative, which has provided \$2.7 billion in assistance to Mexico since fiscal year 2008 to combat drug trafficking and support Mexican efforts to support human rights, combat corruption, and reform its institutions. The committee also strongly supports Department of Defense-led military-to-military engagement with Mexico. As General Lori J. Robinson, former Commander of U.S. Northern Command (USNORTHCOM), noted in testimony before the committee on February 15, 2018, this engagement starts at “the tactical level and extends through the close ties between USNORTHCOM senior leadership and SEMAR [Secretaría de Marina] and SEDENA [Secretaría de la Defensa Nacional].”

The committee applauds recent high-level engagement between senior leaders of the Department of Defense (DOD) and the Government of Mexico. It also notes the success of recent exercises ranging from U.S. Marine Forces North's provision of training to over 1,500 Mexican Marines, who are on the frontlines of combating drug trafficking, to Mexico's participation in the UNITAS 2017 exercise, during which U.S. and Mexican forces joined members of 16 other militaries in Peru to enhance their ability to conduct naval operations and interoperable amphibious operations, stability operations, and humanitarian and disaster relief missions in the Western Hemisphere. Such activities, along with the security cooperation funding provided by DOD and International Military Education and Training funds directed by the Department of State and administered by DOD, are critical to the security of both Mexico and the United States. The importance of these ties will only

increase given the challenges posed by heroin cultivation and the proliferation and smuggling of potent synthetic opioids, such as fentanyl, in and through Mexico to the United States.

The committee encourages the Secretary of Defense and the Secretary of State to continue to deepen the military-to-military relations with Mexico through the continued provision of training and equipment to enhance SEDENA and SEMAR's capabilities to combat transnational criminal organizations, regular bilateral engagements on defense with Mexican leadership, and swift coordination across agencies to approve training activities and exercises in ways that support and reinforce U.S. national security policy.

### **United States policy and strategy in the Western Balkans**

The committee affirms that the United States commitment to a Europe whole, free, and at peace remains ironclad. Furthermore, the committee recognizes that security and prosperity in the Western Balkans remain essential for the success of this vision.

However, the committee recognizes that the region confronts growing challenges: lagging economic growth, corruption, rising political tensions within and among states, the threat of radicalization and terrorism, and malign Russian influence. For example, in a hearing before the committee on March 8, 2018, General Curtis Scaparrotti, Commander of U.S. European Command, testified that the area that most concerned him in relation to future Russian interference was "the Balkans." He added, "Russia's at work in the Balkans, and I think we've kind of taken our eye off the area." If unaddressed or unresolved, these challenges confronting the Western Balkans could have serious consequences for regional security and prosperity, as well as for U.S. interests in Europe.

The committee believes the United States needs a clear policy and strategy for the Western Balkans—one that is integrated with the European Union's (EU) "Strategy for the Western Balkans" and, most importantly, backed by enhanced, focused, and sustained engagement by senior political leaders in the United States. The committee encourages the president to consider the appointment of a Presidential Special Envoy to lead and coordinate U.S. diplomatic efforts in the region and oversee implementation of a U.S. strategy for the region across the interagency.

The committee believes such a strategy should include diplomatic, economic, and military efforts to: (1) Support the sovereign right of the countries of the Western Balkans to pursue integration into the Euro-Atlantic community through institutions including the North Atlantic Treaty Organization (NATO) and the EU; (2) Counter Russian malign influence in the region; (3) Integrate U.S. and EU efforts to incentivize reform, combat corruption, strengthen the rule of law, and hold regional leaders accountable for results; (4) Enhance military-to-military engagement between the United States and the militaries of the Western Balkans countries to promote interoperability with NATO, civilian control of the military, procurement reforms, and regional security cooperation; (5) Promote energy security in the Western Balkans; (6) Support diplomatic efforts to normalize relations between Serbia and Kosovo through the EU-led, U.S.-supported dialogue process; (7) Resolve

the dispute between Greece and Macedonia, enabling Macedonia to move forward with integration into NATO and the EU; and (8) Align U.S. and EU efforts in Bosnia-Herzegovina to catalyze and advance necessary domestic political reforms.

### **U.S. Africa Command**

In April 2018 testimony before the committee, Secretary of Defense James Mattis noted, “Our efforts in Africa are largely focused on assisting nations facing violent terrorists to develop their own capability to provide internal security and mutual support against insurgents and terror groups.” The committee believes that the security cooperation efforts of U.S. Africa Command (AFRICOM) are critical to support the 2018 National Defense Strategy’s direction to move towards a “more resource sustainable approach” to combat shared security threats to the U.S. and our partners.

For example, the committee notes the important role regional partnerships in the African Union Mission in Somalia are playing to combat the threat posed by al-Shabaab and other terrorist threats in Somalia. General Thomas Waldhauser, the Commander of AFRICOM, stated in testimony that Ethiopia “remains a long-standing partner and contributes over 4,000 uniformed personnel to the African Union Mission in Somalia, further advancing regional peace and security efforts in East Africa.” Similarly, General Waldhauser noted that Kenya and Uganda “continue to develop reconnaissance and surveillance capabilities to build their capacity for counterterrorism operations” against al-Shabaab and other terrorist threats.

Other important regional security cooperation programs, such as the State Department-led Global Peace Operations Initiative and the African Peacekeeping Rapid Response Partnership, are focused on strengthening the capacity, capabilities, and professionalism of African partners to support peacekeeping and crisis response operations across the continent.

In order to absorb and sustain security cooperation programs such as these, partner nations must build and maintain accountable and transparent government institutions with a commitment to civilian control of the military, respect for human rights, and good governance. The committee encourages AFRICOM to develop a code of conduct, in conjunction with African partner nations, to establish a common standard with regard to issues of defense sector corruption, including a commitment to equitable, transparent, and accountable defense institutions, the development and improvement of security-sector legal capacity, and a commitment to the rule of law.

The committee supports these efforts and encourages AFRICOM to continue its emphasis on a whole-of-government approach, leveraging the specific skill sets of interagency partners like the Department of State, United States Agency for International Development, and others to synchronize and complement Department of Defense efforts to build the capability and capacity of our African partners to strengthen institutions and develop local solutions to radicalization, destabilization, and other drivers of conflict that undermine stability and our shared security interests.



## **TITLE XIII—COOPERATIVE THREAT REDUCTION**

### **Specification of Cooperative Threat Reduction funds (sec. 1301)**

The committee recommends a provision that would define the Cooperative Threat Reduction (CTR) program, define the funds as authorized to be appropriated in section 301 of this Act, and authorize CTR funds to be available for obligation for 3 fiscal years.

### **Funding allocations (sec. 1302)**

The committee recommends a provision that would authorize \$335.2 million, the amount of the budget request, for the Cooperative Threat Reduction program.



## **TITLE XIV—OTHER AUTHORIZATIONS**

### **Subtitle A—Military Programs**

#### **Working capital funds (sec. 1401)**

The committee recommends a provision that would authorize the appropriations for the defense working capital funds at the levels identified in section 4501 of division D of this Act.

#### **Chemical Agents and Munitions Destruction, Defense (sec. 1402)**

The committee recommends a provision that would authorize the appropriations for Chemical Agents and Munitions Destruction at the levels identified in section 4501 of division D of this Act.

#### **Drug Interdiction and Counter-Drug Activities, Defense-wide (sec. 1403)**

The committee recommends a provision that would authorize the appropriations for Drug Interdiction and Counterdrug Activities, Defense-wide, at the levels identified in section 4501 of division D of this Act.

#### **Defense Inspector General (sec. 1404)**

The committee recommends a provision that would authorize the appropriations for the Office of the Inspector General of the Department of Defense at the levels identified in section 4501 of division D of this Act.

#### **Defense Health Program (sec. 1405)**

The committee recommends a provision that would authorize appropriations for the Defense Health Program activities at the levels identified in section 4501 of division D of this Act.

### **Subtitle B—National Defense Stockpile**

#### **Consolidation of reporting requirements under the Strategic and Critical Materials Stock Piling Act (sec. 1411)**

The committee recommends a provision that would amend section 11 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98h–2) to consolidate reporting requirements.

### **Subtitle C—Armed Forces Retirement Home**

#### **Authorization of appropriations for Armed Forces Retirement Home (sec. 1421)**

The committee recommends a provision that would authorize an appropriation of \$64.3 million from the Armed Forces Retirement

Home Trust Fund for fiscal year 2019 for the operation of the Armed Forces Retirement Home.

**Expansion of eligibility for residence at the Armed Forces Retirement Home (sec. 1422)**

The committee recommends a provision that would amend section 1512 of the Armed Forces Retirement Home Act of 1991 (24 U.S.C. 412) to include as authorized residents of the Armed Forces Retirement Home (AFRH): (1) Persons with a service-connected disability incurred in the line of duty in the Armed Forces; and (2) Certain spouses of residents. The provision would also delineate persons ineligible to be residents of the AFRH: (1) Persons discharged or released from military service under other than honorable conditions; and (2) Persons with substance abuse or mental health problems, with a limited exception.

**Oversight of health care provided to residents of the Armed Forces Retirement Home (sec. 1423)**

The committee recommends a provision that would amend section 1513A(c) of the Armed Forces Retirement Home Act of 1991 (24 U.S.C. 413a(c)) to revise the duties of the senior medical advisor to the Armed Forces Retirement Home (AFRH) to require the senior medical advisor to facilitate and monitor the timely availability to residents of the AFRH such medical, mental health, and dental care services as such residents may require at locations other than the AFRH and to monitor compliance by the facilities of the AFRH with applicable accreditation and health care standards and requirements.

**Modification of authority on acceptance of gifts for the Armed Forces Retirement Home (sec. 1424)**

The committee recommends a provision that would amend paragraph (1) of section 1515(f) of the Armed Forces Retirement Home Act of 1991 (24 U.S.C. 415(f)) to authorize the Chief Operating Officer of the Armed Forces Retirement Home (AFRH) to accept, receive, solicit, hold, administer, and use any gift, devise, or bequest, either absolutely or in trust, of real or personal property, or any income therefrom or other interest therein, for the benefit of the AFRH. This provision would allow the AFRH to adopt gift authorities consistent with those of other Federal Government organizations, which are not intended to be capitalized by direct appropriations.

**Relief for residents of the Armed Forces Retirement Home impacted by increase in fees (sec. 1425)**

The committee recommends a provision that would prohibit the removal or release of a resident of the Armed Forces Retirement Home (AFRH) as of September 30, 2018, after that date based solely on the inability of the resident to pay the amount of any increase in fees applicable to residents that take effect on October 1, 2018. The provision would require the Chief Operating Officer of the AFRH to accommodate residents impacted by the fee structure that takes effect on October 1, 2018, through hardship relief, additional deductions from gross income, and other appropriate actions.

**Limitation on applicability of fee increase for residents of the Armed Forces Retirement Home (sec. 1426)**

The committee recommends a provision that would limit the amount of the fee increase for a resident of the Armed Forces Retirement Home (AFRH) as of April 9, 2018, of those fees scheduled to increase on October 1, 2018, to 50 percent of the fees payable by such resident.

**Subtitle D—Other Matters**

**Authority for transfer of funds to joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund for Captain James A. Lovell Health Care Center, Illinois (sec. 1431)**

The committee recommends a provision that would authorize the Secretary of Defense to transfer \$113.0 million from the Defense Health Program to the joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund, created by section 1704 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) for the operations of the Captain James A. Lovell Federal Health Care Center.

**Economical and efficient operation of working capital fund activities (sec. 1432)**

The committee recommends a provision that would direct the Department of Defense to implement workload plans that optimize the efficiency of the workforce operating within a working capital fund activity and reduce the rate structure. The provision would also encourage the working capital fund to perform reimbursable work for other entities where appropriate.

**Items of Special Interest**

**Assessment on material shortfalls in United States Forces Korea for chemical, biological, radiological, and nuclear defenses**

The committee is encouraged by the increased chemical, biological, radiological, and nuclear (CBRN) defense efforts by United States Forces Korea (USFK). The committee remains concerned that there are unknown shortfalls in material needs for the CBRN mission on the South Korean peninsula. Therefore, the committee directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with USFK, to submit an assessment, no later than 180 days after the enactment of this Act, that establishes operational requirements and shortfalls for early warning systems, decontamination and tactical disablement operations, collective protection equipment, weapons of mass destruction characterization, subterranean operations, and additional areas that the Secretary deems appropriate.

The committee is also concerned that United States Forces Korea has not adequately prepared for decontamination efforts or identified possible limitations in the event of a chemical weapon attack. Accordingly, the assessment shall include the Department of Defense's ability to respond to chemical contamination and the limita-

tion of water availability on the Korean Peninsula to assist in decontamination.

**Fiscal stability of the National Defense Stockpile**

The committee is strongly supportive of the recent efforts by the National Defense Stockpile (NDS) to execute the acquisition of strategic and critical materials, expand domestic qualification, and recycle military end items in order to reclaim strategic materials and rare earth elements.

Given the committee's concern that the funds within the National Defense Stockpile Transaction Fund have been significantly depleted and that the fund lacks long-term financial stability without appropriated funds, the committee is strongly encouraged by and supportive of the NDS' recent plan to coordinate a long-term strategy to request Transaction Fund appropriations in the future years defense program, coupled with the possible reconfiguration of existing stockpiles for modern military and strategic requirements.

## **TITLE XV—AUTHORIZATION OF ADDITIONAL APPROPRIATIONS FOR OVERSEAS CONTINGENCY OPERATIONS**

### **Subtitle A—Authorization of Additional Appropriations**

#### **Purpose (sec. 1501)**

The committee recommends a provision that would establish this title and make authorization of appropriations available upon enactment of this Act for the Department of Defense, in addition to amounts otherwise authorized in this Act.

#### **Overseas contingency operations (sec. 1502)**

The committee recommends a provision that would designate authorization of appropriations in this section as Overseas Contingency Operations.

#### **Procurement (sec. 1503)**

The committee recommends a provision that would authorize the additional appropriation for procurement activities at the levels identified in section 4102 of division D of this Act.

#### **Research, development, test, and evaluation (sec. 1504)**

The committee recommends a provision that would authorize the additional appropriation for research, development, test, and evaluation activities at the levels identified in section 4202 of division D of this Act.

#### **Operation and maintenance (sec. 1505)**

The committee recommends a provision that would authorize the additional appropriations for operation and maintenance activities at the levels identified in section 4302 of division D of this Act.

#### **Military personnel (sec. 1506)**

The committee recommends a provision that would authorize the additional appropriations for military personnel activities at the levels identified in section 4402 of division D of this Act.

#### **Working capital funds (sec. 1507)**

The committee recommends a provision that would authorize the additional appropriations for the Defense Working Capital Funds at the levels identified in section 4502 of division D of this Act.

#### **Drug Interdiction and Counter-Drug Activities, Defense-wide (sec. 1508)**

The committee recommends a provision that would authorize the additional appropriations for the Drug Interdiction and Counter-

Drug Activities, Defense-wide at the levels identified in section 4502 of division D of this Act.

**Defense Inspector General (sec. 1509)**

The committee recommends a provision that would authorize the additional appropriations for the Office of the Inspector General of the Department of Defense identified in section 4502 of division D of this Act.

**Defense Health Program (sec. 1510)**

The committee recommends a provision that would authorize the additional appropriations for the Defense Health Program activities identified in section 4502 of division D of this Act.

**Subtitle B—Financial Matters**

**Treatment as additional authorizations (sec. 1521)**

The committee recommends a provision that would state that the amounts authorized to be appropriated in this title are in addition to amounts otherwise authorized to be appropriated by this Act.

**Special transfer authority (sec. 1522)**

The committee recommends a provision that would allow the Secretary of Defense to transfer up to \$3.5 billion of Overseas Contingency Operations funding authorized for fiscal year 2019 in this title to unforeseen higher priority needs in accordance with normal reprogramming procedures. This transfer authority would be in addition to the authority provided to the Secretary elsewhere in this Act.

**Subtitle C—Other Matters**

**Joint Improvised-Threat Defeat Organization (sec. 1531)**

The committee recommends a provision that would authorize \$610.1 million for the Joint Improvised-Threat Defeat Organization. Additionally, the provision would mandate that none of these funds would be available for obligation or expenditure to supply training, equipment, supplies, or services to a foreign country before the date that is 15 days after the date on which the Secretary of Defense has submitted to the congressional defense committees, the Committee on Foreign Relations of the Senate, and the Committee on Foreign Affairs of the House of Representatives a notice detailing the relevant arrangement.

**Budget Items**

**Tomahawk**

The budget request did not include funding for line number 3 of Weapons Procurement, Navy (WPN) Overseas Contingency Operations (OCO), for Tomahawk missiles.

On April 13, 2018, the United States fired 69 Tomahawk missiles into Syria. The committee recommends procuring Tomahawk missiles to replenish the Navy's inventory of Tomahawks to account for the missiles used.

Thus, the committee recommends an increase of \$82.8 million to line number 3 of WPN OCO to procure 69 Tomahawk missiles.

#### **Ammunition less than \$5 million**

The budget request included \$211.9 million for Navy Ammunition Overseas Contingency Operations (OCO), of which \$2.2 million was for LI 15, Ammunition Less than \$5 million.

Accordingly, the committee recommends a decrease of \$2.0 million to Navy Ammunition OCO, LI 15 due to excess to need.

#### **JASSM-ER**

The budget request included \$61.6 million in line number 2 of Missile Procurement, Air Force (MPAF) Overseas Contingency Operations (OCO), for the Joint Air-Surface Standoff Missile (JASSM).

On April 13, 2018, the United States fired 19 JASSMs in Syria. The JASSM is no longer in production and has been replaced with a more capable variant, the Joint Air-Surface Standoff Missiles Extended Range (JASSM-ER). The committee recommends procuring JASSM-ERs to replenish the Air Force's inventory to account for the JASSMs used.

The committee recommends an increase of \$22.8 million to line number 2 of MPAF OCO to procure 19 JASSM-ERs.

### **Items of Special Interest**

#### **Cargo inspections to counter vehicle borne Improvised Explosive Device (IED) threats**

The committee is encouraged that the Department of the Army is testing and planning to deploy new passive cargo inspection technologies to address a joint urgent operational need to counter Vehicle Borne Improvised Explosive Device (VBIED) threats. This disruptive technology, which utilizes naturally occurring cosmic ray muons and electrons, identifies shielded and unshielded nuclear and radioactive materials; detects smuggled contraband, including weapons, bomb-making materials, and illicit goods; and is proven safe for humans, animals, and food products.

The committee encourages the Army to continue with the current testing program and supports efforts to deploy the system at a major U.S. military facility. Further, the committee requests a briefing 60 days after the enactment of this Act on the potential future deployments of these next generation inspection technologies inside and outside the continental United States. The briefing, which may be provided in a classified setting, shall include an assessment of current cargo inspection protocols and requirement gaps that may exist.



## **TITLE XVI—STRATEGIC PROGRAMS, CYBER, AND INTELLIGENCE MATTERS**

### **Subtitle A—Space Activities**

#### **Modifications to Space Rapid Capabilities Office (sec. 1601)**

The committee recommends a provision to clarify and update the structure of the Space Rapid Capabilities Office (Space RCO).

The committee notes that section 1601 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) re-designates the Operationally Responsive Space (ORS) Office as the Space RCO. Given the challenges the committee had in persuading the Department of Defense to recognize the need for responsive space since the inception of the ORS Office, mandated in the National Defense Authorization Act for 2013 (Public Law 112–239), the committee is encouraged by the enthusiasm expressed by the Commander, Air Force Space Command and the other Air Force senior leadership for the Space RCO.

#### **Space warfighting policy and review of space capabilities (sec. 1602)**

The committee recommends a provision that would require the Secretary of Defense to develop a space warfighting policy not later than March 29, 2019. The provision would also direct the Secretary of Defense to conduct a review relating to the national security space enterprise that evaluates: (1) The resiliency of the national security space enterprise with respect to a conflict; (2) The ability of the national security space enterprise to attribute an attack on a space system in a timely manner; (3) The ability of the United States to resolve a conflict in space and determine the material means by which such a conflict may be resolved; (4) The ability of the national security space enterprise to defend against, defeat, and deter aggressive behavior in space; (5) The effectiveness and efficiency of the national security space enterprise to rapidly research, develop, acquire, and deploy space capabilities and capacities; (6) The current organizational structure of the national security space enterprise with respect to roles, responsibilities, and authorities; (7) Any emerging space threat the Deputy Secretary expects the United States to confront over the next 10 years; and (8) Any other matters that the Deputy Secretary considers appropriate.

#### **Report on enhancements to the Global Positioning System Operational Control Segment (sec. 1603)**

The committee recommends a provision that would require the Secretary of the Air Force to submit a report to the congressional defense committees no later than 1 year after the enactment of this

Act with an interim briefing no later than March 15, 2019, on potential further enhancements to the Operational Control Segment for the Global Positioning System to achieve capabilities similar to the Next Generation Operational Control Segment, including cyber security enhancements and other incremental capabilities. The report would also include the cost and schedule for such additional capabilities and enhancements.

**Streamline of commercial space launch operations (sec. 1604)**

The committee recommends a provision that would amend section 1617 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–92; 129 Stat. 1106; 51 U.S.C. 50918 note) to prohibit the Secretary of Defense’s imposition of a requirement in procurement germane to national security space launch duplicative of any requirement imposed by the Secretary of Transportation under chapter 509 of title 10, United States Code. The provision would also include a waiver.

**Reusable launch vehicles (sec. 1605)**

The committee recommends a provision that would require the Secretary of Defense to carry out the policy set forth in section 2273 of title 10, United States Code, that regarding assured access to space for national security payloads, with a strategy that includes reusable launch systems.

The provision would also require the Secretary to submit to the congressional defense committees, no less than 60 days prior to the issuance of the solicitation for procurement of space launch services, a determination as to: whether launch vehicles using previously flown components could meet mission requirements, whether services utilizing reusable launch vehicles are eligible for award, and, if not, a justification for this ineligibility.

**Review of and report on activities of International Space Station (sec. 1606)**

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Administrator of the National Aeronautics and Space Administration, to complete a review of each program, activity, and future technology research project of the Department of Defense being carried out on the International Space Station and submit that review to the Committee on Armed Services and the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Armed Services, the Committee on Energy and Commerce, and the Committee on Science, Space, and Technology of the House of Representatives.

**Subtitle B—Defense Intelligence and Intelligence-Related Activities**

**Framework on governance, mission management, resourcing, and effective oversight of Department of Defense combat support agencies that are also elements of the intelligence community (sec. 1611)**

The committee recommends a provision that would require the Secretary of Defense to develop and codify in policy a framework and supporting processes within the Department of Defense to ensure that the missions, roles, and functions of the Combat Support Agencies of the Department of Defense that are also elements of the Intelligence Community, and other intelligence components of the Department, are appropriately balanced and resourced.

**Subtitle C—Cyberspace-Related Matters**

**Part I—Cyberspace Generally**

**Policy of the United States on cyberspace, cybersecurity, cyber warfare, and cyber deterrence (sec. 1621)**

The committee recommends a provision that would establish the policy of the United States with respect to matters pertaining to cyberspace, cybersecurity, and cyber warfare.

The committee has long expressed its concern with the lack of an effective strategy and policy for addressing cyber threats and cyber deterrence. The National Defense Authorization Act has included numerous provisions over the past few years that directed the executive branch to define and develop the policies and strategies necessary to improve the structure, capability, roles, and responsibilities of our national cyber efforts. The committee has also placed a strong emphasis on the need for developing a comprehensive cyber deterrence strategy. Unfortunately, the committee believes the responses to those requests have been insufficient hitherto and incommensurate with the threat we face in the cyber domain.

**Affirming the authority of the Secretary of Defense to conduct military activities and operations in cyberspace (sec. 1622)**

The committee recommends a provision that would affirm the authority of the Secretary of Defense to conduct military activities and operations in cyberspace, including clandestine military activities and operations, to defend the United States, its allies, and its interests, in anticipation of and in response to malicious cyber activities carried out against the United States or a United States person by a foreign power. The provision would affirm that this authority includes the conduct of military activities or operations in cyberspace short of war and in areas outside of named areas of conflict for the purpose of preparation of the environment, adversary influence, force protection, deterrence of hostilities, and counterterrorism operations involving the Armed Forces of the United States. The provision would also make clear that clandestine military activities or operations in cyberspace are traditional military activi-

ties for the purposes of section 503(e)(2) of the National Security Act of 1947 (Public Law 80–253).

The committee understands that the authors of the National Security Act used the term “traditional military activities” to exempt standard military operations and activities from the Act’s stringent reporting requirements, designed for the intelligence community’s covert action. The authors did not anticipate the cyber domain or the nature of modern cyber conflict and therefore could not establish whether the military’s activities in cyberspace qualify as such traditional military activities. As a result, there is some debate across the executive branch today as to whether sufficient precedent exists to determine that clandestine military activities in cyberspace should qualify as traditional military activities. This interagency disagreement has limited the Department of Defense’s ability to conduct these necessary operations, novel only in that they occur in the cyber domain.

The committee believes that clandestine military activities in cyberspace are not just traditional military activities but essential to the military effectiveness of the Armed Forces in modern warfare. The committee asserts that persistent cyber operations in adversary networks, or “red space,” are critical for the development of military and deterrence targets. As Lieutenant General Paul Nakasone stated on February 27, 2018, in his response to the committee’s advance policy questions for his nomination to be the Commander, U.S. Cyber Command and the Director of the National Security Agency, “to be operationally effective in cyberspace, U.S. forces must have the ability to conduct a range of preparatory activities, which may include gaining clandestine access to operationally relevant cyber systems or networks.” The committee is concerned that, without the ability to identify, surveil, and pre-position tools on targets in peacetime, the military’s ability to provide options to military planners and the President during wartime will be severely limited.

#### **Active defense and surveillance against Russian Federation attacks in cyberspace (sec. 1623)**

The committee recommends a provision that would authorize the National Command Authority to direct the Commander, U.S. Cyber Command (CYBERCOM), to take appropriate and proportional action through cyberspace to disrupt, defeat, and deter systematic and ongoing attacks by the Russian Federation in cyberspace. The provision would require the Commander, U.S. Cyber Command, to provide at least quarterly reports to the congressional defense committees in any year in which such actions are undertaken.

The provision would also authorize the Secretary of Defense to conduct, through the Commander, U.S. Cyber Command, surveillance in networks outside the United States of personnel and organizations engaged at the behest or in support of the Russian Federation in: (1) Stealing and releasing confidential information from U.S. persons campaigning for public office or organizations supporting such campaigns; (2) Generating and planting information and narratives in U.S. social media and other media intended to mislead, sharpen social and political conflicts, or otherwise manipulate perceptions and opinions of American citizens; (3) Creating

networks of subverted computers and false accounts on social media platforms for the purpose of spreading and amplifying such information and narratives; and (4) Planning and developing capabilities to attack U.S. critical infrastructure with the intent to cause casualties among U.S. persons or persons of allies of the United States, significant damage to private or public property, significant economic disruption, an effect, individually or in aggregate, comparable to that of an armed attack or one that imperils a vital national security interest of the United States, or significant disruption of the normal functioning of the United States democratic society or government, including attacks against or incidents involving critical infrastructure that could damage systems used to provide key services to the public or government.

The provision would direct the Secretary of Defense, either directly or in coordination with other Federal agencies and departments, and using the results of the surveillance conducted through CYBERCOM, to work with social media companies on a voluntary basis to assist those companies in identifying accounts created by personnel and organizations engaged at the behest or in support of the Russian Federation and that violate the companies' terms of service. The provision would allow the Secretary of Defense to grant security clearances to individuals of media companies as the Secretary deems necessary and appropriate for this purpose.

Finally, the provision would require the Secretary of Defense to submit an annual report to the Congress on the scope and intensity of Russian Federation information operations and attacks through cyberspace against the U.S. government and the American people, as observed by the Cyber Mission Forces of CYBERCOM and the National Security Agency.

Through open and closed hearings with Department of Defense officials and independent experts, the committee received testimony on the feasibility and appropriateness of utilizing the Cyber Mission Forces assigned to CYBERCOM, operating outside the United States, to detect, identify, track, and actively disrupt the activities of operators working on behalf of the Russian Federation to conduct influence operations in the United States. The committee heard testimony establishing that the Russian Federation seeks to achieve strategic objectives in conducting such operations and concludes that the threat posed by such operations is significant enough to require active countervailing actions. These illegal operations, to date, though intended to achieve strategic effects, are generally assessed to fall into the category of "grey zone conflict," below the level of an armed attack. The committee believes that disrupting them in proportionate self-defense through traditional military activities in cyberspace is likewise not an armed attack nor escalatory. The committee urges the National Command Authority to act on this authorization.

#### **Reorganization and consolidation of certain cyber provisions (sec. 1624)**

The committee recommends a provision that would amend part I of subtitle A of title 10, United States Code, by transferring sections 130g, 130j, and 130k, currently of chapter 13, to chapter 19. This reorganization would codify these sections, governing some of

the Department of Defense's responsibilities and reporting requirements concerning cyberspace, under "Cyber Matters" rather than "General Powers and Functions."

**Designation of official for matters relating to integrating cybersecurity and industrial control systems within the Department of Defense (sec. 1625)**

The committee recommends a provision that would require the Secretary of Defense to designate one official as responsible for the integration of cybersecurity and industrial control systems within the Department of Defense, to include the development of Department-wide standards for integration of industrial control systems and the potential applicability of frameworks set forth by the National Institute of Standards and Technology and similar organizations.

The committee is concerned that no one individual is responsible for defining industrial control system cybersecurity standards within the Department of Defense and that the lack of such an individual has impeded holistic cybersecurity efforts across the Department and its critical infrastructure.

**Assistance for small manufacturers in the defense industrial supply chain on matters relating to cybersecurity (sec. 1626)**

The committee recommends a provision that would require the Secretary of Defense, acting through the Chief Information Officer and Under Secretary of Defense for Research and Engineering, to improve awareness of cybersecurity threats among small- and medium-sized manufacturers in the defense industrial supply chain. Measures pursuant to this requirement would include: (1) Energetic outreach to the relevant businesses critical to the industrial base and supply chain needs of the Department of Defense (DOD); (2) The development of cybersecurity self-assessments to enhance firms' understanding of network vulnerabilities and the Department's cybersecurity standards; (3) The transfer of appropriate cybersecurity technology, threat information, and techniques developed in the DOD to these businesses; and (4) The establishment of a cyber counseling certification program, or approval of a similar extant program, to certify small- and medium-sized business professionals and other relevant acquisition staff within the DOD to provide cyber planning assistance to small- and medium-sized manufacturers.

The committee is concerned that small- and medium-sized manufacturers of defense or defense-related systems are unaware of or unable to meet the cybersecurity standards of the DOD; they therefore represent a potential vulnerability to DOD systems and assets. The committee believes that, to avoid exclusion of small- and medium-sized manufacturers from the acquisition process, the Department should be proactive in its communication to and cooperation with these businesses in ensuring that they can meet DOD standards. The committee also believes that the Department should consider using extant resources and capacities in this space, including the National Institute of Standards and Technology Manufacturing

Extension Partnership Program and the National Network of Manufacturing Institutes.

**Modification of acquisition authority of the Commander of United States Cyber Command (sec. 1627)**

The committee recommends a provision that would amend section 807 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) by extending the acquisition authority established in that section for the Commander, U.S. Cyber Command. The section initially limited the Commander’s obligation and expenditure germane to his acquisition authority to \$75.0 million from fiscal year 2016 through fiscal year 2021, at which point the authority would sunset. This provision would extend that authority through fiscal year 2025 and raise the limit on obligation and expenditure to \$250.0 million.

**Email and Internet website security and authentication (sec. 1628)**

The committee recommends a provision that would require the Secretary of Defense to implement the requirements of the Binding Operational Directive (BOD) 18–01, issued by the Secretary of the Department of Homeland Security (DHS) on October 16, 2017. This BOD was modeled on actions directed by the United Kingdom’s National Cybersecurity Center to enhance email security and authentication and web security. The Department of Defense (DOD) as a rule is exempt from DHS BODs, on the grounds that the DOD’s security posture is superior to that of the rest of the government. In this case, however, the DHS BOD makes eminent sense for DOD and should be adopted as soon as possible.

The actions required specifically include: (1) The adoption of the START Transport Layer Security (STARTTLS) protocol for encryption; (2) Enforcement of Sender Policy Framework (SPF), Domain Keys Identified Mail (DKIM), and Domain-based Message Authentication, Reporting & Conformance (DMARC) for email authentication; and (3) Implementation of Hypertext Transfer Protocol Strict Transport Security (HSTS).

These simple measures would provide enormous cybersecurity benefits for the Department and would bring the Department in line with current accepted standards.

The provision would also require the Chief Information Officer of the Department of Defense to notify the congressional defense committees within 180 days of the issuance of a DHS BOD germane to cybersecurity as to whether the Department plans to comply with the directive or how the Department plans to meet the security objectives of the directive.

**Matters pertaining to the Sharkseer cybersecurity programs (sec. 1629)**

The committee recommends a provision that would require the Secretary of Defense to transfer the Sharkseer cybersecurity program from the National Security Agency (NSA) to the Defense Information Systems Agency (DISA). In executing this transfer, the Secretary would be required to also transfer all funding and, as needed, personnel for the program. The provision would fence 10

percent of the funding available for obligation in fiscal year 2019 and subsequent years for NSA's Information Systems Security Program, PE 33140G, until the Principal Cyber Advisor certifies to the congressional defense committees that the operations and maintenance funding for the Sharkseer program for fiscal year 2019 and the subsequent fiscal years of the current future years defense program are available or programmed.

The provision would also require the Secretary of Defense to adopt the Sharkseer "break and inspect" decryption capability as the enterprise solution in satisfaction of the requirement in section 1636 of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291). In executing this requirement, the provision would require the Secretary to integrate the Sharkseer break and inspect subsystem with the Department of Defense's public key infrastructure.

The provision would require the Secretary, by October 1, 2020, to enable the Sharkseer system and computer network defense service providers to automatically identify and locate hosts and endpoints that received or sent malware detected by Sharkseer or other network perimeter defense systems for remediation.

The committee notes that the Sharkseer system provides an enterprise capability for "sandboxing as a service," meaning that it has the capacity to receive and run in a virtual host any suspicious samples isolated by any component in the Department of Defense (DOD). Meanwhile, other DOD organizations are pursuing redundant capabilities. This provision would require the termination of alternative sandbox-as-a-service initiatives and designation of Sharkseer for that purpose by October 1, 2020.

Finally, the provision would authorize an increase of \$20.0 million to the \$790.2 million requested for the Defense Information Systems Agency in Procurement, Defense-wide. The committee recommends this additional authorization to increase the bandwidth of the Sharkseer system to match the increased bandwidth of the Internet Access Points that the Sharkseer system must monitor.

**Pilot program on modeling and simulation in support of military homeland defense operations in connection with cyber attacks on critical infrastructure (sec. 1630)**

The committee recommends a provision that would require the Assistant Secretary of Defense for Homeland Defense and Global Security to carry out a pilot program on modeling and simulation in support of military homeland defense operations through U.S. Northern Command and U.S. Cyber Command. The pilot program would be based on the results and lessons learned from ongoing research exercises involving local government, industry, and military responses to combined natural disasters and cyber attacks on critical infrastructure. The ongoing research exercises, known as "Jack Voltaic 1.0" and "Jack Voltaic 2.0," are conducted by the Army Cyber Institute, industry partners, and the cities of New York and Houston.

In general, the objective of such a pilot program would be the development of risk analysis methodologies and the application of advanced commercial simulation and modeling capabilities, based on hyperscale cloud computing technology and artificial intelligence/

machine learning technology, for use by active and reserve component military forces, industry, and civil government organizations, to: (1) Assess defense critical infrastructure vulnerabilities and interdependencies to improve military resilience; (2) Determine the likely effectiveness of potential cyber attacks and the countermeasures, tactics, and tools used in responding to such attacks; (3) Train personnel in incident response; (4) Conduct complex and large scale exercises and test scenarios; and (5) Foster collaboration and learning between and among departments and agencies of the Federal government, State and local government, military forces, and private entities responsible for critical infrastructure. The pilot would also assist in the development and demonstration of the foundations for a potential program of record for a shared, high-fidelity, interactive, and affordable cloud-based modeling and simulation of critical infrastructure systems and incident response that can simulate complex cyber and physical disruptions on local, State, regional, and national scales.

The provision would require the Assistant Secretary to provide a report on the pilot program coincident with the submission of the President's fiscal year 2020 budget request. The report should include: (1) A description of the exercises conducted under the "Jack Voltaic" series and the pilot program; (2) An inventory of the cybersecurity units of the National Guard and Reserves that could be shared among the States under mutual assistance compacts; (3) A description of the risk analysis methodologies and modeling and simulation capabilities developed and demonstrated in the pilot, together with an assessment of the potential future growth of commercial technology; (4) Recommendations regarding the establishment of a program of record for the Department of Defense for the further development and sustainment of advanced, large-scale modeling and simulation on modern cloud infrastructure of cyber warfare involving critical infrastructure; (5) Lessons learned from the application of novel risk analysis methodologies and large-scale modeling and simulation regarding vulnerabilities, required capabilities, and reconfigured force structure, coordination practices, and policy; and (6) Planned steps for implementing these lessons.

The budget request included \$10.2 billion in Research, Development, Test and Evaluation (RDT&E), Army, of which \$28.5 million was for PE 62308A Advanced Concepts and Simulation. The committee recommends an increase of \$10.0 million, for a total of \$38.5 million, in RDT&E Army, PE 62308A, for the pilot program on modeling and simulation.

#### **Security product integration framework (sec. 1631)**

The committee recommends a provision that would require the Principal Cyber Advisor (PCA), the Chief Information Officer (CIO), and the Commander, U.S. Cyber Command, to select a network or network segment and associated computer network defense service provider to conduct a demonstration and evaluation of one or more existing security product integration frameworks, including through modification of network security systems to enable such systems to ingest, publish, subscribe, tip and cue, and request information or services from each other.

The provision also includes congressional findings that: (1) The Department of Defense (DOD) requires a standard, enterprise-wide “security product integration framework” (SPIF) that provides machine-to-machine data exchange architecture and protocol to achieve interoperability among and orchestration of all the cybersecurity tools, applications, systems, and services deployed across DOD networks; (2) Information security products and services must be engineered not only to connect to this framework but also to consume and act on the information that can be provided and to prompt other actions by other devices and applications; and (3) Candidate SPIFs would ideally be non-proprietary or designed as a modular open system.

The committee directs that the PCA, CIO, and Commander, U.S. Cyber Command: (1) Complete this demonstration and evaluation by October 1, 2019; (2) Promptly report their findings and recommendations to the Deputy Secretary of Defense for consideration of funding for follow-on activities in preparation of the budget request for fiscal year 2020; and (3) Provide a briefing on the results to the congressional defense committees on request.

**Report on enhancement of software security for critical systems (sec. 1632)**

Consistent with and pursuant to section 1647 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), section 1650 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), and section 1640 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), the Assistant Secretary of Defense for Homeland Defense and Global Security, who serves as the Principal Cyber Advisor, and the Chief Information Officer shall conduct a technical and cost-benefit study of the merits of applying, to the vulnerability assessment and remediation of nuclear systems and nuclear command and control, a critical subset of conventional power projection capabilities, cyber command and control, and defense critical infrastructure: (1) Technology developed and used by Department of Defense combat support agencies to discover flaws and weaknesses in software code by inputting immense quantities of pseudo-random data, commonly referred to as “fuzz,” to identify inputs that cause the software to fail; (2) Software fuzzing-as-a-service in a commercial cloud that could be used to continuously “fuzz” critically important software repositories used by the Department of Defense to make them more secure and stable by combining modern fuzzing techniques with scalable distributed execution; (3) Formal programming and protocol language for software code development and other methods and tools developed under the High Assurance Cyber Military Systems program of the Defense Advanced Research Projects Agency; and (4) The binary analysis and symbolic execution software security tools developed under the Cyber Grand Challenge program of the Defense Advanced Research Projects Agency to discover flaws and weaknesses in software by inputting mathematically generated data based on automated analysis of code and providing proof of, and patches to, the identified flaws.

The Principal Cyber Advisor and the Chief Information Officer shall provide a report to the congressional defense committees on

the results of the study, and their recommendations for further action, no later than March 1, 2019.

**Comply to connect and cybersecurity scorecard (sec. 1633)**

The committee recommends a provision that would prohibit the obligation or expenditure of funds for the so-called Cybersecurity Scorecard after October 1, 2019, unless the Department of Defense (DOD) is implementing by that date a funded program pursuant to section 1653 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) to fulfill the requirements established by the Chief Information Officer (CIO) and the Commander, U.S. Cyber Command in the Information Security Continuous Monitoring Strategy, Comply-to-Connect Strategy, Enterprise Patch Management Service Strategy and Concept of Operations, and User Activity Monitoring Strategy.

The provision would also require the Director of Cost Assessment and Program Evaluation (CAPE) to submit a report to the congressional defense committees: (1) Comparing the current capabilities of the DOD to the requirements established by the CIO and the Commander, U.S. Cyber Command pursuant to section 1653 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) for the Information Security Continuous Monitoring Strategy, Comply-to-Connect Strategy, Enterprise Patch Management Service Strategy and Concept of Operations, and User Activity Monitoring Strategy; and (2) The capabilities deployed by the Department of Homeland Security (DHS) and the General Services Administration under the Continuous Diagnostics and Mitigation Program across the non-DOD Federal agencies and departments.

The provision would also require the CIO, the Principal Cyber Advisor (PCA), the Director of Operations of the Joint Staff, and the Commander, U.S. Cyber Command to establish risk thresholds for systems and network operations that, when exceeded, would trigger heightened security measures.

Finally, the provision would require, not later than 180 days after the enactment of this Act, the CIO and the PCA to develop a plan to implement an enterprise governance, risk, and compliance platform and process similar to those adopted by leading commercial entities for information and operational technology security.

The Congress has in vain mandated multiple times in legislation that the DOD correct its inability to account for software licenses in use across the Department. Likewise, the Congress has mandated the development and implementation of a strategy for automated comply-to-connect and continuous monitoring capabilities. The committee notes that budget justification materials for the President's fiscal year 2019 request show that the CIO and the Commander, U.S. Cyber Command developed the required strategy, implementation plans, and funding proposal but that the proposal was rejected by the CAPE in the issue-paper cycle. Meanwhile, DOD components are in a constant scramble to produce through manual data calls the regular cybersecurity scorecard for the Secretary of Defense, but this scorecard is neither up-to-date nor accurate, as the Department has no method for detecting the large number of unknown devices and unaccounted for software in-

stances running on its networks. That unknown software on unknown devices represents a substantial risk, in addition to the risk posed by cumbersome, rigid, and manually managed patching and access procedures.

The committee notes that commercial products exist to solve these serious problems and that the DHS is already fielding such capabilities in protection of the civil departments and agencies.

#### **Cyberspace Solarium Commission (sec. 1634)**

The committee recommends a provision that would establish the Cyberspace Solarium Commission, tasked with developing a strategic approach to protecting and advancing the United States' advantages in cyberspace. The Commission would weigh the benefits and costs of various strategic frameworks (e.g., deterrence, norms-based regimes, and cyber persistence), evaluate the sufficiency of the current allocation of resources in cyberspace, and consider potential realignments in governmental structure and authorities.

The Commission would comprise 13 members, including the Principal Deputy Director of National Intelligence, the Deputy Secretary of Homeland Security, the Deputy Secretary of Defense, and 10 members chosen by the majority and minority parties of the Senate and the House of Representatives. The latter would be either members of Congress or cybersecurity and national security experts from the public and private sectors. The Commission would be co-chaired by a member of the Republican Party and a member of the Democratic Party. The Commission would have broad authorities to hold hearings, request information from government entities, subpoena witnesses, and contract out taskings.

Not later than September 1, 2019, the Commission would submit a report detailing its findings to the congressional defense committees, the congressional intelligence committees, the Director of National Intelligence, the Secretary of Defense, and the Secretary of Homeland Security. Not later than 60 days after receipt of the Commission's report, the Director of National Intelligence and the Secretary of Defense would both submit to the congressional defense and intelligence committees their assessments of the report and final recommendations.

The committee is aware that a nascent literature on cybersecurity strategy has emerged, encompassing the views and theories of various entities across State and Federal government, the private sector, and academia. Practitioners have begun to appreciate this body of thought and leverage these resources in shaping the Nation's cybersecurity posture. The committee is enthusiastic about this decentralized initiative but believes that the establishment of the Cyber Solarium Commission, by formalizing this utilization process, would only improve the government's cybersecurity posture and help to preserve the United States' extant advantages.

In 1953, President Eisenhower convened the original Project Solarium as a resource to inform the United States' containment strategy. The project featured three teams, with two advocating differing degrees of containment and one advancing a strategy of roll-back. This direct comparison illuminated for the Eisenhower administration a number of implications and contingencies associated with containment, thus refining its successful implementation of

containment in NSC 162/2, an update on the Truman administration's NSC 68. The committee sees a great deal of value in such an approach, especially as it might be applied to one of the great challenges of our time: preserving the United States' interests and advantages in cyberspace.

**Program to establish cyber institutes at institutions of higher learning (sec. 1635)**

The committee recommends a provision that would authorize the Secretary of Defense to establish a Cyber Institute at any college or university that hosts a Reserve Officers' Training Corps program, with special consideration for the Senior Military Colleges.

The committee recognizes the importance of institutions of higher learning in the education and development of the cyber workforce and believes that these institutions offer an avenue to accelerate and focus the development of foundational expertise in critical cyber operations skills for future military and civilian leaders. The committee commends the Department on its continued investment in cyber education and training as a cornerstone of our national security.

The committee believes that the Department's future focus on cyber education and training should extend to other institutions of higher learning that have Reserve Officers' Training Corps programs in order to develop the cyber workforce across the active and components. The Senior Military Colleges offer robust cyber programs at the undergraduate and graduate levels, provide a focus on leadership development, and commission a large portion of officers across the active, reserve, and National Guard components.

**Establishment of Cybersecurity for Defense Industrial Base Manufacturing Activity (sec. 1636)**

The committee recommends a provision that would authorize the Secretary of Defense to, in consultation with the National Institute of Standards and Technology, establish an activity to assess and strengthen the cybersecurity resiliency of the defense industrial base in the United States, including the development of cybersecurity test capabilities, development of training regimes, integration of defense industrial base cybersecurity into research and development roadmaps and threat assessments, and the dissemination of relevant capabilities to address threats to the defense industrial base.

**Part II—Mitigation of Risks Posed by Providers of Information Technology with Obligations to Foreign Governments**

**Definitions (sec. 1637)**

The committee recommends a provision that would establish definitions for subsequent provisions relating to the establishment of a program to mitigate the risks derivative of foreign governments' code review of information technology products used by the Department of Defense.

**Identification of countries of concern regarding cybersecurity (sec. 1638)**

The committee recommends a provision that would require the Secretary of Defense to create a prioritized list of countries of concern related to cybersecurity based on their governments' hostility, intelligence activity, criminal activity, and willingness and ability to disrupt the U.S. government's supply chain.

**Mitigation of risks to national security posed by providers of information technology products and services who have obligations to foreign governments (sec. 1639)**

The committee recommends a provision that would prohibit the Department of Defense's use of any information technology, cybersecurity, industrial control system, weapons system, or computer antivirus system unless the provider discloses to the Secretary of Defense: (1) whether it has allowed a foreign government to review or access a product custom-developed for the Department of Defense or is under any obligation to provide a foreign person or government with access or review of such a product; (2) whether it has allowed a government listed in the report required by section 1638 of this Act to review or access the source code of a product, system, or service that the Department is using or intends to use or is under any obligation to do so; and (3) whether it holds or has sought a license pursuant to the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations, or successor regulations, for information technology products, components, software, or services.

The provision would further require that a procurement contract for the covered products include a clause requiring that, if the provider becomes aware of any additional information germane to these requirements, this information be disclosed during the period of the contract.

Finally, the provision would require the Secretary of Defense to take measures to mitigate the risks gleaned from and associated with these disclosures, including conditioning in contracts and limitations of use of certain products.

**Establishment of registry of disclosures (sec. 1640)**

The committee recommends a provision that would require the Secretary of Defense to establish a registry containing the information on foreign governments required by section 1638 of this Act and on providers of information technology products and services required by section 1639 of this Act. The provision would also require the Secretary to make available this information to any agency conducting a procurement pursuant to the Federal Acquisition Regulations and Defense Federal Acquisition Regulations and to submit a report to the relevant congressional committees on the scope of acquisition for and mitigation agreements relevant to the Department of Defense's acquisition of products for which a disclosure has been made under section 1639 of this Act.

**Subtitle D—Nuclear Forces****Oversight and management of the command, control, and communications system for the national leadership of the United States (sec. 1641)**

The committee recommends a provision that would centralize and clarify responsibility for national leadership command, control, and communications systems by requiring the Secretary of Defense to designate a single individual responsible for strategic portfolio management of these and related programs. The provision would also modify the structure of the Council on Oversight of the National Leadership Command, Control, and Communications System to streamline its functions and make the single individual designated by the Secretary the sole Chair.

The committee commends the Secretary for his commitment to reforming the governance of nuclear command, control, and communications (NC3) and has great respect for the dedication of the small group of knowledgeable individuals throughout the Department of Defense who have been deeply involved in this effort. The NC3 enterprise is one of the most complex and distributed systems in the Department, and the committee agrees that such an important system cannot effectively be managed by a council. The committee believes that a single individual should be responsible, and also accountable, for the successful management of the NC3 enterprise, including synchronization of programs across the Air Force, Navy, and other organizations, advocacy for adequate budgets and personnel in the Services, and timely integration of new systems into the ongoing nuclear triad modernization programs. The individual should also have the authorities required to be effective in these roles and a full-time staff to support him or her.

**Modification to requirement for conventional long-range standoff weapon (sec. 1642)**

The committee recommends a provision that would allow the Air Force to retire the conventionally-armed AGM-86C prior to achieving initial operating capability for a conventionally-armed variant of the long-range standoff weapon (LRSO). The provision would instead require the Air Force to begin procurement and fielding of a conventionally-armed LRSO not more than 5 years after the nuclear LRSO completes initial operational test and evaluation.

**Exchange program for nuclear weapons program employees (sec. 1643)**

The committee recommends a provision that would require the Chairman of the Nuclear Weapons Council and the Administrator of the National Nuclear Security Administration to jointly establish a program to exchange civilian and military personnel on a temporary basis between the offices of the Department of Defense working on nuclear weapons policy, production, and force structure issues and the Office of the Deputy Administrator for Defense Programs in the National Nuclear Security Administration at the Department of Energy. The program would provide for the exchange of between 5 and 10 civilian and military personnel for terms of 1 to 2 years. The provision would require the Chairman and the Ad-

ministrator to provide interim guidance to the congressional defense committees within 90 days of the date of enactment of this Act and to implement such guidance within 180 days of the date of enactment.

The committee intends for this program to foster working-level relationships between personnel working on nuclear weapons programs in both Departments. The committee firmly believes that frequent and robust communication between the relevant offices, as well as broadening experience for the personnel involved, would result in more effective implementation of nuclear weapons programs in the medium- and long-term.

**Procurement authority for certain parts of intercontinental ballistic missile fuzes (sec. 1644)**

The committee recommends a provision that would give the Air Force the authority to expend funds appropriated for fiscal year 2019 to buy certain intercontinental ballistic missile fuze parts as part of the effort to replace the Mk21 fuze.

The committee notes that this collaborative effort with the Navy has enabled both Services to leverage commonality between the intercontinental ballistic missile and sea-launched ballistic missile fuze components. Both Services have worked with Sandia National Laboratories to perform fuze design and development, which has ensured maximum use of common components, subassemblies, and technologies.

The committee also understands that this authority has allowed the Air Force to execute life-of-type buys with the Navy for fiscal years 2015 through 2019, at an estimated savings of \$600.0 million to the Air Force. The committee encourages the Navy and the Air Force to continue to seek areas of commonality between missile programs and leverage those to create efficiencies.

**Plan to train officers in nuclear command, control, and communications (sec. 1645)**

The committee recommends a provision that would require the Secretary of Defense, in consultation with the Secretary of the Air Force, the Secretary of the Navy, and the Chairman of the Joint Chiefs of Staff, to develop a plan to train, educate, manage, and track field-grade military officers in nuclear command, control, and communications (NC3). The provision would require the Secretary of Defense to submit the plan to the congressional defense committees no later than 180 days from the date of enactment of this Act.

The committee is aware that managing the NC3 enterprise is one of the most complex and vital missions of the U.S. military and requires operational, technical, and acquisition expertise. The committee does not believe that incidental knowledge of NC3 gained through operation of a nuclear weapons system like a nuclear-capable bomber or intercontinental ballistic missile is sufficient to constitute NC3 expertise. The committee also understands that the Services do not provide sufficient opportunities for explicit training or education on the subject and do not deliberately develop officers who possess desired expertise to be effective leaders in this complex mission area. The committee believes that a carefully-managed cohort of officers trained or educated in the NC3 enterprise

as a whole will be required to build and maintain the future enterprise.

The committee does not intend to prejudge the content of the plan and encourages the Secretary of Defense to examine options including modifying or creating entirely new officer career fields, developing specialized joint professional military education, designating specific NC3 billets, modifying promotion timelines and opportunities, and crafting exchanges among various elements of the NC3 mission.

**Plan for alignment of acquisition of warhead life extension programs and delivery vehicles for such warheads (sec. 1646)**

The committee recommends a provision that would require the Chairman of the Nuclear Weapons Council (NWC) to provide a proposal to better align acquisition of National Nuclear Security Administration (NNSA) warhead life extension programs with Department of Defense (DOD) nuclear weapons delivery vehicle programs. The plan would be due no later than February 15, 2019.

The committee is concerned about challenges with synchronization between NNSA and DOD acquisition programs, such as the B61-12 life extension with the Tail-Kit Assembly and the W80-4 life extension with the Long-Range Standoff weapon. As the nuclear modernization program continues and with the recommendations of the 2018 Nuclear Posture Review, opportunities to better align DOD and NNSA programs—such as the analysis of alternatives regarding a sea-launched cruise missile and the W78 warhead replacement, both beginning this year—will increase in number and salience. The committee believes that poor synchronization could disrupt these and other elements of the nuclear modernization program, resulting in unacceptable delays in delivery.

The committee encourages the Chairman of the NWC to seek input from all stakeholders in the formation of this plan, including the other members of the NWC, the Navy, the Air Force, and the Deputy Administrator of the NNSA for Defense Programs—as well as the Assistant Secretaries of Defense for Acquisition and Nuclear, Chemical, and Biological Defense Programs within the Chairman's own office. The committee further encourages the Chairman to consider a wide range of options within the proposal, including improvements to and standardization of mechanisms that have been successful for existing programs and changes in acquisition authorities or processes for the NNSA and the DOD. The committee hopes to receive the plan in time to consider any proposal requiring legislative action in the defense authorization for fiscal year 2020.

**Extension of annual report on plan for the nuclear weapons stockpile, nuclear weapons complex, nuclear weapons delivery systems, and nuclear weapons command and control system (sec. 1647)**

The committee recommends a provision that would extend the reporting requirement in section 1043 of the National Defense Authorization Act for Fiscal Year 2012 (Public Law 112-81), as amended, by 5 years, through fiscal year 2024.

**Prohibition on use of funds for activities to modify United States aircraft to implement Open Skies Treaty (sec. 1648)**

The committee recommends a provision that would prohibit the obligation or expenditure of any funds for fiscal year 2019 for research, development, test, and engineering, Air Force, or aircraft procurement, Air Force, for the digital visual imaging system to modify U.S. aircraft for the purpose of implementing the Open Skies Treaty until the President and the Secretary of Defense submit the two certifications described in section 1235(b) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

**Sense of Senate on Nuclear Posture Review (sec. 1649)**

The committee recommends a provision that would make a series of findings and state the sense of the Senate on the 2018 Nuclear Posture Review.

**Subtitle E—Missile Defense Programs**

**Extension of prohibition relating to missile defense information and systems (sec. 1651)**

The committee recommends a provision that would amend section 130h(e) of title 10, United States Code, by striking “January 1, 2019,” and inserting “January 1, 2021,” to extend the limitations on providing certain sensitive missile defense information to the Russian Federation and integrating missile defense systems of the Russian Federation and the People’s Republic of China into U.S. missile defense systems.

**Multiyear procurement authority for Standard Missile–3 IB guided missiles (sec. 1652)**

The committee recommends a provision that would provide authority for the Secretary of Defense to enter into a multiyear contract for the procurement of up to 204 Standard Missile–3 (SM–3) Block IB guided missiles for fiscal year 2019 through fiscal year 2023 program years, with advance procurement for economic order quantities also beginning in fiscal year 2019 pending the Director of Cost Assessment and Program Evaluation confirmation of the Secretary of the Navy’s preliminary findings as required in subsection a of section 2306b of title 10, United States Code.

The SM–3 Block IB program is a core element of the Aegis Ballistic Missile Defense program and is approved through the current future years defense program. This provision would provide the following benefits: (1) Generate cost savings compared to annual procurement cost estimates; (2) Provide stable production of SM–3 Block IBs; (3) Provide a long-term commitment to the low-density aerospace industrial base that stabilizes aerospace employment levels; (4) Provide an incentive for industry capital investment for productivity improvements that would benefit several Department of Defense missile programs; and (5) Reduce disruptions in vendor delivery schedules.

**Extension of requirement for reports on unfunded priorities of Missile Defense Agency (sec. 1653)**

The committee recommends a provision that would amend section 1696 of the National Defense Authorization Act of Fiscal Year 2017 (Public Law 114–328), removing the sunset requirement for the unfunded priorities list of the Missile Defense Agency.

**Iron Dome short-range rocket defense system and Israeli cooperative missile defense program co-development and co-production (sec. 1654)**

The committee recommends a provision that would authorize not more than \$70.0 million for the Missile Defense Agency to provide to the Government of Israel to procure components for the Iron Dome short-range rocket defense system through co-production of such components in the United States. Before disbursing the funding for Iron Dome to the Government of Israel, the Director of the Missile Defense Agency and the Under Secretary of Defense for Acquisition and Sustainment must certify that the March 5, 2014, bilateral international agreement concerning Iron Dome, as amended, is being implemented.

The provision would also authorize \$50.0 million for the Missile Defense Agency to provide to the Government of Israel for the procurement of the David's Sling Weapon System and \$80.0 million for the Arrow 3 Upper Tier Interceptor Program, including for co-production of parts and components in the United States by U.S. industry. The funds for the David's Sling Weapon System may be disbursed after the Under Secretary of Defense for Acquisition and Sustainment certifies: (1) That the Government of Israel has demonstrated successful completion of certain milestones required by the research, development, and technology agreement and the bilateral co-production agreement; (2) That the funds will be matched on a one-for-one basis or in an amount that otherwise meets best efforts; and (3) That the level of co-production of parts and components in the United States is not less than 50 percent.

The funds for the Arrow 3 Upper Tier Interceptor Program may be disbursed after the Under Secretary of Defense for Acquisition and Sustainment certifies that the United States has entered into a bilateral agreement with the Government of Israel. That agreement must establish: (1) The terms of co-production of parts and components; (2) Transparency on the Israeli requirement for the number of interceptors and batteries; (3) Technical milestones for co-production and procurement; (4) A joint affordability working group to consider cost reduction initiatives; and (5) Joint approval processes for third-party sales.

The committee acknowledges that the September 14, 2016, Memorandum of Understanding (MOU) between the United States and Israel commits \$500.0 million in U.S. funding for cooperative missile defense programs annually beginning in fiscal year 2019 and ending in fiscal year 2028. According to the MOU, the United States and Israel jointly understand that any U.S. funds provided for such programs should be made available according to separate bilateral agreements for the Iron Dome, David's Sling, and Arrow 3 Upper Tier Interceptor Program and should maximize co-production of parts and components in the United States at a level equal

to or greater than 50 percent of U.S.-appropriated funds for production. Additionally, Israel commits not to seek additional missile defense funding from the United States for the duration of the MOU, except in exceptional circumstances as may be jointly agreed by the United States and Israel. The committee expects to receive annual updates on all cooperative defense programs, as delineated in the MOU, to include progress reports and spending plans, as well as the top-line figures of the Israel Missile Defense Organization budget for these programs.

**Metrics for evaluating effectiveness of integrated Ballistic Missile Defense System against operationally realistic ballistic missile attacks (sec. 1655)**

The committee recommends a provision that would prohibit the Director of the Missile Defense Agency (MDA) from obligating 50 percent of funds available for the Command and Control, Battle Management and Communications (C2BMC) until the Director of the Missile Defense Agency establishes metrics for evaluating the effectiveness of the integrated Ballistic Missile Defense System (BMDS) and its components and elements against operationally realistic ballistic missile attacks on areas defended by U.S. combatant commands. Since 2004, the MDA has expended roughly \$5.1 billion in funding for the C2BMC system. While this funding has delivered vital capabilities to the warfighter over time, as the Congress exercises oversight of MDA, it is difficult to follow the progress that the investment in C2BMC has delivered.

The MDA reports capability delivery goals and progress at the element level, which enables some oversight of individual elements. However, the MDA does not report progress related to software intensive capabilities that drive how two or more elements must interact to deliver higher performing integrated BMDS capabilities: for example, the ability to launch one of several types of interceptors that are part of the integrated system based on a cue from the family of sensors that are part of the integrated system. Thus, the Congress has limited insight into the progress and overall return on investment.

The committee notes that increasing BMDS integration, including automation and interoperability between multiple BMDS elements, is crucial to addressing increasing quantities and capabilities of ballistic missile threats world-wide and recognizes MDA's recent progress in BMDS integration. In recent years, however, the Comptroller General of the United States and the Department of Defense Director of Operational Test and Evaluation continue to report integrated BMDS capability shortfalls, in part due to schedule delays for C2BMC. Specifically, the MDA emphasizes the importance of the C2BMC as the BMDS integrator; however, the way progress is reported makes it nearly impossible to determine how much cost growth or schedule delay has occurred and to assess which capabilities the C2BMC has delivered over the last decade as compared to original plans, budgets, and schedules.

The lack of objective metrics for these capabilities has limited visibility into the effects of delays on overall performance and has thus been a significant impediment to adequate oversight. The

Comptroller General has therefore recommended that such metrics and progress be part of the MDA's external reporting process.

Given that the C2BMC is a software intensive capability, the metrics that allow assessment of progress differ from those typically used to assess hardware-intensive systems. Metrics that demonstrate improvement in the quality and timeliness of the information the system uses to manage ballistic missile defense battles are critically important. Such measures would allow oversight and assessment of the extent to which C2BMC is or is not shortening the amount of time and resources required to sense a ballistic missile threat and the success rate for engagement of the threat-to include complex structured attacks, not merely engagement of a single threat.

This provision would require the Director, Missile Defense Agency, to coordinate with the Director, Operational Test and Evaluation; Director, BMDS Operational Test Agency; Commander, Joint Forces Combatant Command-Integrated Missile Defense; as well as the service acquisition executives and combatant commanders to develop operationally relevant performance metrics for the integrated BMDS and, in particular, C2BMC capabilities.

This provision would also require the MDA to report progress against these metrics in its annual reports to the congressional defense committees on its acquisition baselines, beginning in February 2019. The committee believes that it is important to require such metrics to ensure that they will be an enduring feature of MDA program management and oversight in the future.

**Modification of requirement relating to transition of ballistic missile defense programs to military departments (sec. 1656)**

The committee recommends a provision that would amend section 1676(b)(2) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) to clarify the equivalent of Milestone C approval for the Missile Defense Agency.

**Sense of the Senate on acceleration of missile defense capabilities (sec. 1657)**

The committee recommends a provision that would express the sense of the Senate that the Missile Defense Agency (MDA) should accelerate the fielding, if technically feasible, of the planned additional 20 ground-based interceptors with redesigned kill vehicles (RKVs) at Fort Greely, Alaska, and ensure that the RKV has demonstrated the ability to accomplish its intended mission through a successful, operationally realistic flight test. Furthermore, the provision would express the sense of the Senate that the MDA should rapidly develop and deploy a space-based sensor architecture and invest in innovative concepts for existing technologies to ensure that missile defenses are effective against emerging threats such as hypersonic and cruise missiles. The provision would also require the Director of the MDA to submit a report to the congressional defense committees no later than 180 days after the enactment of this Act on the ways the MDA could accelerate such construction and deployment at Fort Greely.

**Integrated air and missile defense for evolving theater missile threats (sec. 1658)**

The committee recommends a provision that would express the sense of the Senate that the United States should pursue regional missile defense assets to counter and deter cruise, short-to-medium-range ballistic, and hypersonic missile threats, as well as continue to focus resources on developing an interoperable and integrated air-and-missile defense architecture. The provision would also require the Secretary of Defense to submit to the congressional defense committees no later than 90 days after the enactment of this Act a report on the Department of Defense's plan for the creation of a fully interoperable and integrated air and missile defense architecture, if consistent with the recommendations of the 2018 Missile Defense Review.

**Acceleration of hypersonic missile defense program (sec. 1659)**

The committee recommends a provision that would require the Director of the Missile Defense Agency to accelerate the hypersonic missile defense program and deploy that program in conjunction with a persistent space-based missile defense sensor program. The provision would also require that the Director submit a report to the congressional defense committees no later than 90 days after the date of enactment of this Act on how hypersonic missile defense can be accelerated to meet emerging hypersonic threats.

**Sense of the Senate on allied partnerships for missile defense (sec. 1660)**

The committee recommends a provision that would express the sense of the Senate that the United States should seek additional opportunities to provide missile defense capabilities to allies and trusted partners and seek to expedite foreign military sales in delivering such missile defenses to those partners.

**Sense of the Senate on results of tests carried out by Missile Defense Agency (sec. 1660A)**

The committee recommends a provision that would express the sense of the Senate that tests carried out by the Missile Defense Agency (MDA) that do not achieve the main intended objective should not be considered failures and that the MDA should recognize the learning value of individual advancements made by all testing events. Furthermore, the provision would express the sense of the Senate that the MDA should continue to build independently accredited modeling and simulation elements and pursue an increasingly rigorous testing regime in coordination with the Office of the Director, Operational Test and Evaluation, to more rapidly deliver capabilities to the warfighter as the threat evolves.

**Sense of the Senate on discrimination for missile defense (sec. 1660B)**

The committee recommends a provision that would express the sense of the Senate that prioritizing discrimination capabilities to improve missile defense effectiveness against current and future threats is critically important. The provision would also require the

Director of the Missile Defense Agency (MDA) to submit a report no later than 90 days after the date of enactment of this Act describing improvements to discrimination required within the missile defense architecture, MDA's plan to rapidly field advanced discrimination capabilities, and an analysis of efforts to address the discrimination challenges of emerging adversary threats.

**Development and deployment of persistent space-based sensor architecture (sec. 1660C)**

The committee recommends a provision that would require the Director of the Missile Defense Agency (MDA) to commence developing a persistent space-based sensor architecture capable of supporting the ballistic missile defense system, notwithstanding the outcome of the Missile Defense Review. The provision would also require that the architecture developed by MDA be compatible with efforts of the Defense Advanced Research Projects Agency (DARPA) related to space-based sensors for missile defense and would require that the Secretary of Defense submit a report no later than 90 days after the date of enactment of this Act to the congressional defense committees on the progress of and coordination between the MDA, DARPA, and Air Force efforts in this area.

**Modification of requirement to develop a space-based ballistic missile intercept layer (sec. 1660D)**

The committee recommends a provision that would require the Director of the Missile Defense Agency to commence development of a space-based ballistic missile intercept layer notwithstanding the outcome of the Missile Defense Review.

**Subtitle F—Other Matters**

**Assessment of the electronic warfare capabilities of Russia and China (sec. 1661)**

The committee recommends a provision that would require the Director of the Defense Intelligence Agency to conduct a comprehensive assessment of the electronic warfare capabilities of the Russian Federation and People's Republic of China. Electronic warfare is increasingly used to gain an asymmetric advantage with respect to electronic systems such as Global Positioning System. It is essential that the Department of Defense, as it develops countermeasures, holistically study all aspects of how Russia and China develop electronic warfare doctrine and order of battle across multiple domains, in addition to long-term research trends for each country.

**Budget exhibit on support provided to entities outside Department of Defense (sec. 1662)**

The committee recommends a provision that would require the Under Secretary of Defense (Comptroller) to include in the budget justification materials accompanying the President's Budget request each year a budget exhibit containing all relevant details on Department of Defense support to the programs at the Executive Office of the President related to senior leader communications and continuity of government programs.

The committee is aware that the Department provides critical capabilities to the President in support of senior leader communications and continuity of government missions, and the committee fully supports these activities, including those of the White House Military Office, the White House Communications Agency, and certain activities at the Defense Information Systems Agency. The committee has found, however, that the Department is often unable to provide even the most basic information about how much funding supports these programs and from where that funding comes. This has resulted in at least one instance in which the Department spent funds despite a provision of law prohibiting the expenditure of those funds. The committee understands the need to protect the details of these programs but strongly believes that the Congress needs more information than currently provided in order to perform its most basic oversight functions.

**Development of Electromagnetic Battle Management capability for joint electromagnetic operations (sec. 1663)**

The committee recommends a provision that would direct the Electronic Warfare Executive Committee to designate a military Service with the responsibility for acting as executive agent for the development of an Electromagnetic Battle Management capability for joint electromagnetic operations.

The committee is concerned by the limited advocacy across the Department of Defense for the development and management of electronic warfare systems. The committee understands that, while a requirement for a joint Electromagnetic Battle Management exists, no Service has been assigned the responsibility for developing the capability. The committee believes that the development of a joint Electromagnetic Battle Management capability is critical to addressing the current and anticipated challenges posed by our most capable adversaries.

**Budget Items**

**Army Cyber Center of Excellence**

The budget request included \$65.8 million for Cyberspace Operations Forces and Force Support, Army Research Development Technology and Engineering programs, PE 35251A. The committee recommends an increase of \$5.0 million, for a total of \$70.8 million, in PE 35251A, for the Army Cyber Center of Excellence to carry out a pilot project in partnership with institutions of higher education.

**Wargaming and simulator systems**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation (RDT&E), Air Force, of which \$117.6 million was for PE 1206601F space technology.

In the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), this committee urged the Department of Defense to invest in its military construction accounts for science and technology facilities, as well as those used for test and evaluation. Unfortunately, these projects generally fall victim to low

prioritization, despite their major value to the Department's mission.

Accordingly, the committee recommends an increase of \$6.0 million, for a total of \$123.6 million, in RDT&E, Air Force, PE 1206601F, for minor military construction. The committee adds these funds in order to fund the request for the Wargaming and Simulator Laboratory. The committee strongly encourages the Air Force to ensure that coordination regarding the appropriate planning and design occurs so that this project is executable.

#### **Ground Based Strategic Deterrent**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation, Air Force (RDTEAF), of which \$345.0 million was for PE 65230F Ground Based Strategic Deterrent (GBSD).

The committee understands that the technology maturation and risk reduction phase of the GBSD program is several months ahead of schedule, in part due to the lack of a protest of the contract award. The committee strongly supports the GBSD program as an integral part of the nuclear modernization effort, supported by the 2018 Nuclear Posture Review. The committee commends the Air Force's effort to maintain or increase schedule margin on this program.

Accordingly, the committee recommends an increase of \$69.4 million, for a total of \$414.4 million in RDTEAF, PE 65230F, for the Ground Based Strategic Deterrent.

#### **Space Rapid Capabilities Office**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation, Air Force (RDTEAF), of which \$366.0 million was for PE 1206857F Space Rapid Capabilities Office. The committee recommends a decrease of \$50.0 million, for a total of \$316.0 million, in RDTEAF, PE 1206857F, for the Solar Power Project, as funding is early-to-need. The committee fully supports the Space Rapid Capabilities Office and its underlying objectives. The committee's reduction of \$50.0 million is without prejudice to the Solar Power Project, and the committee has confirmed with the Air Force's Space and Missile Systems Center that the funding could be applied to other Air Force space priorities, such as the Blackjack program, without any impact on the Solar Power Project. The committee expects and encourages the Air Force to request the necessary funding in its fiscal year 2020 budget to maintain the schedule for the Solar Power Project.

#### **Long Range Standoff Weapon**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation, Air Force (RDTEAF), of which \$614.9 million was for PE 64932F Long Range Standoff Weapon (LRSO).

The committee understands that, after an initial delay in the award of the technology maturation and risk reduction contracts for the LRSO in 2017, the program is now executing ahead of schedule. The committee supports the timely replacement of the AGM-85B Air-Launched Cruise Missile in order to retain a credible air-launched leg of the nuclear triad and is concerned that,

without additional funding, the Air Force may be forced to slow down or stop work on the LRSO program.

Accordingly, the committee recommends an increase of \$85.0 million, for a total of \$699.9 million in RDTEAF, PE 64932F, for the Long Range Standoff Weapon.

#### **Next-Generation Overhead Persistent Infrared**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation, Air Force (RDTEAF), of which \$643.1 million was for the PE 1206442F Evolved Space-Based Infrared System. The committee recommends an increase of \$100.0 million, for a total of \$743.1 million, in RDTEAF, PE 1206442F, to accelerate sensor development. The committee, in consultation with the Air Force, believes the acceleration of space vehicle sensor development is required to reduce overall program risk for the Block 0 Next-Generation Persistent Infrared satellite and to begin risk reduction for Block 1.

#### **Joint Space Operations Center Mission System**

The budget request included \$40.2 billion in Research, Development, Test, and Evaluation, Air Force (RDTEAF), of which \$72.3 million was for PE 1203614F Joint Space Operations Center Mission System.

The committee recognizes the agile software development realignment of this program and notes that there should be cost savings associated with this approach.

Accordingly, the committee recommends a decrease of \$10.0 million, for a total of \$62.3 million, in RDTEAF, PE 1203614F.

#### **Hypersonic missile defense**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$120.4 million was for hypersonic missile defense.

The committee believes this is insufficient to accelerate the development of critical interceptor technology in the areas of propulsion and materials as well as initiate across the kill chain advanced technology activities specifically focused on the hypersonic glide vehicle threat.

Therefore, the committee recommends an increase of \$46.1 million—\$10.5 million for PE 64181C; \$13.4 million for PE 63178C; and \$22.2 million for PE 63180C—for a total of \$166.5 million, in RDTEDW, for hypersonic missile defense. This additional funding was requested by the Director of the Missile Defense Agency on the Unfunded Requirements List.

#### **Exploiting commercial technology for synthetic aperture radar imaging and automated exploitation**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$83.1 million was for PE 63375D8Z Technology Innovation. The committee recommends an increase of \$20.0 million, for a total of \$103.1 million, in RDTEDW, PE 63375D8Z, to fund the engineering development and launch of multiple prototype synthetic aperture radar (SAR) satellites and to sustain Project DATAHUB.

The committee continues to support the efforts of the Department of Defense (DOD) to exploit technology advances to acquire additional, affordable space-based SAR capabilities. Currently, only foreign companies produce commercially available SAR satellites. Multiple U.S. companies are developing small SAR satellites at an estimated price point of \$10.0 million or less per satellite on a recurring cost basis, with launch costs adding several million dollars, amounts that are orders of magnitude less than traditional space acquisition programs. These satellites are designed to have resolution in the range of 1 meter and impressive per-orbit collection capacity. At present and forecasted cost and performance levels, the DOD could afford to purchase, launch, and sustain a large constellation to augment the coverage and resilience, and reduce the latency of, existing and planned government and commercial imaging systems.

The Vice Chairman of the Joint Chiefs and the former Deputy Secretary of Defense also led an initiative, under Project DATAHUB, to capitalize on commercial expertise in artificial intelligence/machine learning technology to automate radar imagery exploitation, which is an indispensable condition for maintaining custody of important ground targets by distributed constellations of spacecraft and airborne sensors.

The committee encourages the Vice Chairman to continue with these initiatives but to also use an established acquisition program office, such as the newly designated Space Rapid Capabilities Office, to execute them. The Vice Chairman should ensure that the Defense Innovation Unit Experimental (DIUx) novates any previously awarded contracts for the efforts to establish the acquisition program that the Vice Chairman selects. The committee directs the Vice Chairman not to continue execution of the initiatives through DIUx. The goal of these efforts is to acquire operational capabilities for the Department of Defense—not to stimulate a commercial radar imaging industry. These projects may be pursued under the “Middle Tier” acquisition authority provided by section 804 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as described in a memorandum dated April 16, 2018, issued by the Under Secretary of Defense for Acquisition and Sustainment.

#### **United States Forces Korea Joint Emergent Operational Need**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$81.0 million was for the U.S. Pacific Command Joint Emergent Operational Need (JEON).

In order to deliver improved ballistic missile defense system capability to the Korean Peninsula, including the integration of existing ballistic missile defense assets to improve engagement options and coverage area, the committee recommends an increase of \$284.5 million—\$184.1 million in PE 63881C, \$24.0 million in PE 63884C, \$71.9 million in PE 63914C, and \$4.5 million in PE 63915C—for a total of \$365.5 million for U.S. Pacific Command JEON. This additional funding was requested by the Director of the Missile Defense Agency (MDA) on the Unfunded Requirements

List. The committee notes, however, that the MDA has struggled in the past to deliver certain capabilities relevant to this JEON on an accelerated schedule despite planning to do so. The committee is not confident that, with the increased funding for the JEON, these capabilities will be delivered on the required schedule. For this reason, the committee urges the MDA to ensure, through rigorous oversight, that the JEON requirements are delivered to the warfighter on time. The committee further notes that removing testing events in order to deliver capabilities in a shorter period of time is an irresponsible acquisition practice and encourages the MDA to reconsider the decision to forgo those testing events.

For these reasons, the committee directs the Comptroller General of the United States to submit to the congressional defense committees a report not later than December 1, 2018, that addresses the following: (1) The MDA's progress in developing, delivering, and deploying the capabilities described in the United States Forces Korea (USFK) JEON; (2) A comparison of USFK JEON capabilities with the original Integrated Air and Missile Defense Battle Command System and the original plans for executing European Phased Adaptive Approach; (3) An evaluation of the extent to which USFK JEON capabilities are sufficient to counter the threat; and (4) An evaluation of any factors inhibiting development, acquisition, and delivery of USFK JEON capabilities.

#### **Midcourse ballistic missile defense**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$926.4 million was for PE 63882C Ballistic Missile Defense Midcourse Defense.

In order to realign the fiscal year 2019 budget with the fiscal year 2018 omnibus, the committee recommends a decrease of \$208.0 million—a \$143.0 million decrease for additional boosters with the redesigned kill vehicle and a \$65.0 million decrease for silos at missile field 4 in Fort Greely, Alaska—for a total of \$718.4 million, in RDTEDW, PE 63882C, for Ballistic Missile Defense Midcourse Defense.

#### **Command and Control, Battle Management and Communications**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide, (RDTEDW), of which \$475.2 million was for PE 63896C Ballistic Missile Defense Command and Control, Battle Management & Communication.

The committee encourages the program to deliver capability more frequently.

Accordingly, the committee recommends a reduction of \$50.0 million, for a total of \$425.2 million, in RDTEDW, PE 63896C.

#### **Sea-based X-band Radar**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$149.7 million was for PE 63907C Sea-based X-band Radar (SBX).

In order to realign the fiscal year 2019 budget with the fiscal year 2018 omnibus, the committee recommends a decrease of \$33.0

million—a \$13.0 million decrease for SBX software upgrades and a \$20.0 million decrease for previous program increases—for a total of \$116.7 million, in RDTEDW, PE 63907C, for SBX.

#### **Ballistic missile defense targets**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$517.9 million was for PE 63915C ballistic missile defense targets.

In order to realign the fiscal year 2019 budget with the fiscal year 2018 omnibus, the committee recommends a decrease of \$36.0 million, for a total of \$486.4 million after the separate \$4.5 million increase for United States Forces Korea Joint Emergent Operational Need, in RDTEDW, PE 63915C, for ballistic missile defense targets.

#### **Boost phase intercept laser scaling**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$148.8 million was for PE 64115C technology maturation.

While multiple efforts are ongoing within the Department of Defense for directed energy, laser scaling is a key technology that will enable the development of a boost phase intercept capability specifically for missile defense.

In order to achieve a demonstration of a 500 kilowatt laser and a best of breed 1-megawatt laser capability by 2024, which will enable the development of a boost phase intercept capability, the committee recommends an increase of \$80.0 million, for a total of \$228.8 million, in RDTEDW, PE 64115C, for technology maturation. This additional funding was requested by the Director of the Missile Defense Agency on the Unfunded Requirements List.

#### **Quartermaster Pathfinder**

The budget request included \$1.2 billion for Advanced Innovative Technologies, Defense-wide Research, Development, Technology, and Engineering programs, exhibit R-1, line 96, Program Element 6425D8Z.

The committee is concerned that our adversaries continue to target Department of Defense data to gain technological and operational advantages, undermining U.S. data security and integrity, as well as mission assurance. As such, the committee supports the development and fielding of enhanced tools to increase data security and integrity for priority missions and supporting systems. The Quartermaster Pathfinder will provide such capabilities, protecting data in both transit and rest to enable increased mission assurance.

Accordingly, the committee recommends an increase of \$50.0 million for the Strategic Capabilities Office's Quartermaster Pathfinder.

#### **Improved homeland defense interceptors**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEDW), of which \$561.2 million was for PE 64874C improved homeland defense interceptors.

In order to realign the fiscal year 2019 budget with the fiscal year 2018 omnibus, the committee recommends a decrease of \$139.4 million, for a total of \$421.8 million, in RDTEW, PE 64878C, for improved homeland defense interceptors.

#### **Midcourse segment test for ballistic missile defense**

The budget request included \$22.0 billion in Research, Development, Test, and Evaluation, Defense-wide (RDTEW), of which \$81.9 million was for PE 64887C ballistic missile defense midcourse segment test.

In order to realign the fiscal year 2019 budget with the fiscal year 2018 omnibus, the committee recommends a decrease of \$9.3 million, for a total of \$72.6 million, in RDTEW, PE 64887C, for ballistic missile defense midcourse segment test.

#### **Missile Defense Tracking System**

The budget request for the Missile Defense Agency (MDA) did not include funding for the Missile Defense Tracking System. The committee believes this capability is vital to the future of the missile defense architecture and notes that the MDA Director, Lieutenant General Greaves, stated in written testimony on March 22, 2018, that “integrated space and terrestrial sensors for cueing, tracking, discrimination, and targeting ballistic missile threats are critical to improving missile defense architecture robustness.” The committee is concerned that as missile defense advanced technology develops, and as the threat of ballistic, hypersonic, and other threats emerge, missile defenses will require an advanced tracking and sensing system and that the Department of Defense has not prioritized this requirement.

Accordingly, the committee recommends an increase of \$73.0 million in Research, Development, Test, and Evaluation, Defense-wide, for PE 1206895C, line number to be determined, to establish a program of record for the Missile Defense Tracking System. This additional funding was requested by the Director of the MDA on the Unfunded Requirements List. Spacecraft and sensor development efforts should be comparable and complementary to efforts underway at the Defense Advanced Research Projects Agency for its Blackjack program, and the Director of the MDA shall provide a report prior to the obligation or expenditure of funds demonstrating such compatibility.

### **Items of Special Interest**

#### **Air Force nuclear acquisition programs**

The committee continues to support the long-term modernization of the nuclear triad but is concerned that the Air Force’s program offices responsible for these programs are understaffed. The programs have separate system program offices with little, if any, bridge between them in personnel despite sharing a common building. Given that the Department of Defense plans for the Ground Based Strategic Deterrent (GBSD) to be operational in the 2030s and that the Minuteman III weapon system is still undergoing sustainment, a coherent acquisition plan must be developed in

order to provide a smooth transition for the intercontinental ballistic missile leg of the triad.

Therefore, the committee directs that no later than March 15, 2019, the Secretary of the Air Force report to the congressional defense committees on the required staffing over the next 5 years for nuclear acquisition programs within Air Force Materiel Command. The report shall detail the acquisition staffing shortfalls at each system program office and a plan to remedy these shortfalls using funding from existing programs for direct hiring of staff. The report shall further articulate a long-term plan for the support of the nuclear modernization program including all potential sources of qualified personnel to ensure continuity of knowledge and expertise in the long term, including the number of required positions over the next 5 years. Finally, the report shall describe a long-term plan for phasing from the sustainment of the Minuteman III to the acquisition of the GBS, which is currently in a technology management and risk reduction phase.

#### **Airborne tracking and targeting system**

The committee notes that the Missile Defense Agency (MDA) has been developing and testing ballistic missile tracking and surveillance using electro-optical-infrared (EO-IR) equipped aircraft under an experimental program. The committee directs the Director of the Missile Defense Agency, in coordination with Commander, Pacific Command and Commander, Central Command to perform an analysis of airborne EO-IR capability to support the ballistic missile defense mission, the airborne platform and sensor capabilities required to perform this mission, and the impacts of the addition of an operational fleet of advanced EO-IR sensors deployed on an airborne platform to the ballistic missile defense system, to include integration and test efforts, operational value for regional and homeland defense, basing options, warfighter concepts of operation, and total research, development, test, and evaluation and operations and sustainment costs associated with deployment to the Pacific Command and Central Command areas of responsibility. The committee directs the Director to provide a briefing to the congressional defense committees no later than June 3, 2019, on this analysis.

#### **Assessment of and plan for experimentation with Iron Dome for short-range air defense**

The committee notes that, since 2011, the Congress has authorized approximately \$1.5 billion for the procurement of Iron Dome batteries for Israel. Given the demonstrated success of Iron Dome, the committee sees value in experimentation with the Iron Dome system, including potential integration of the Iron Dome command and control system with existing U.S. Army Air and Missile Defense (AMD) systems, to assess its suitability in addressing gaps in U.S. AMD capabilities. However, the committee understands that there may be some software code limitations and MILSPEC standard compliance concerns. Therefore, the committee directs the Army to provide to the congressional defense committees no later than December 31, 2018, an assessment of Iron Dome's suitability for the Army's short-range air defense mission, a plan for experi-

mentation with and demonstration of Iron Dome, and a determination of the feasibility of its use.

#### **Common Minuteman III maintenance vehicle**

The committee understands that each intercontinental ballistic missile wing within the Air Force currently receives a bare maintenance truck, which must then be individually retrofitted in an ad hoc way to support maintenance operations by enlisted airmen. The result is a cost- and labor-inefficient process for the Minuteman III weapons system, which is common to all three wings. The committee further understands that the Air Force chose to pursue a common maintenance truck for each of the North Atlantic Treaty Organization and U.S. European Command sites for maintenance personnel to work with the B61 weapons and that this program has been successful.

Therefore, the committee directs the Secretary of the Air Force to provide a report to the congressional defense committees no later than March 15, 2019, containing a plan to transition to a common maintenance vehicle once the current vehicle begins to age out over the next 5 years.

#### **Comptroller General review of Department of Defense cyber classification**

The committee directs the Secretary of Defense to submit a report to the congressional defense committees and the Government Accountability Office no later than 90 days after the enactment of this Act detailing the Department of Defense's classification and declassification practices and policies regarding its posture, order of battle, and policies in cyberspace.

The committee directs the Comptroller General of the United States to submit a report to the congressional defense committees no later than 1 year after receipt of these procedures on these classification and declassification practices, assessing their stringency, especially as compared to other classification and declassification instructions, and their potential effect in overclassification.

The committee is concerned that the Department's classification policies are overly restrictive regarding matters in cyberspace. Though it recognizes that the Department's cyber posture and policies are particularly sensitive, it is frustrated by the Department's excessive secrecy, which reduces cyber's visibility, excludes otherwise-informed voices from policy debates, and obviates justification of posture and policy choices.

#### **Comptroller General review of Department of Defense cyber hygiene**

The committee directs the Comptroller General of the United States to submit a report to the congressional defense committees no later than 1 year after enactment of this Act on policies governing the Department of Defense (DOD) cyber hygiene and the implementation of its Cybersecurity Culture and Compliance Initiative and Cyber Workforce Management Program. The report should assess: (1) The threat posed by the Department's cyber hygiene weaknesses; (2) The Department's cyber hygiene strategy and guidelines; and (3) The Department's means of distribution, edu-

cation, and implementation, especially as compared to successful cybersecurity curricula in the private and public sector. No later than 180 days after the Comptroller General submits the report, the DOD Chief Information Officer (CIO) shall submit a report summarizing his comments and plan to address the Government Accountability Office's concerns.

The committee is concerned that the Department's greatest vulnerabilities may lie in architectures through which DOD personnel interact with outside networks, making poor cyber hygiene the utmost priority. While the Department's measures to negate the systematic vulnerabilities of its secure networks are impressive, it must continue to improve its pedagogy of best cyber practices throughout the Department and implement its signature cybersecurity initiatives. These efforts lie within the purview of the CIO, whose responsibilities and authorities have changed precipitously in the last few years; the committee hopes that this instability has not impaired the Department's development and communication of cyber hygiene best practices.

#### **Comptroller General review of geographic combatant command integration in nuclear planning and operations**

The 2018 Nuclear Posture Review (NPR) identifies the increased potential for regional conflicts involving nuclear-armed adversaries, including Russia and North Korea. Further, the NPR highlights the need for U.S. leadership, including U.S. Combatant Commanders, to communicate across networked command and control systems and integrate nuclear and non-nuclear military planning and operations. The committee notes in particular that the NPR states that the combatant commands will plan, train, and exercise to integrate U.S. nuclear and non-nuclear forces to deter limited nuclear escalation and non-nuclear attacks. The committee supports this effort but is concerned that that significant improvements will need to be made in infrastructure and operations to support.

Therefore, the committee directs the Comptroller General of the United States to assess the Department of Defense's plans and efforts to incorporate the geographic combatant commands into nuclear planning and operations, including command and control responsibilities. The assessment should include: (1) The role of the geographic combatant commands in the nuclear mission; (2) The expertise within the geographic combatant commands on nuclear planning and capabilities; (3) The ability of geographic combatant commands to plan and conduct nuclear operations, including command and control operations; and (4) Any changes to command and control infrastructure that might be needed to support the recommendation of the NPR.

The committee directs the Comptroller General to provide a briefing on preliminary findings to the Committees on Armed Services of the Senate and the House of Representatives by March 31, 2019, with a report to follow at a time agreed to at the time of the briefing. The committee also directs the Department of Defense, the military departments, and the relevant combatant and subordinate commands to share relevant information about nuclear plan-

ning, capabilities, and operations with the Government Accountability Office in order to enable this review.

### **Conventional Prompt Strike early limited operational capability**

The committee continues to be encouraged by the commitment of the Department of Defense to the Conventional Prompt Strike (CPS) activity shown in the budget request and remains supportive of the Department's approach of maturing and demonstration key technologies needed by both land- and sea-based CPS systems. The committee believes that, should the Department determine that an early limited operational capability for the CPS activity is required, the Department should budget additional funding above the current plan in order to avoid cost and schedule delays to the planned baseline activity. The committee further directs the Secretary of Defense, in coordination with the Director of Navy Strategic Systems Programs, to provide a briefing to the congressional defense committees no later than November 1, 2019, on the current progress of the Conventional Prompt Strike activity.

### **Counter-Unmanned Aircraft Systems Technology**

The committee remains concerned about the proliferation of unmanned aircraft systems (UASs), which include both the unmanned aircraft and its operator controller device. For a number of years, adversaries of the United States have used UASs in international conflict areas to surveil, disrupt, and threaten U.S. and allied personnel, facilities, and interests. These challenges are compounded by the growing prevalence of UASs domestically, which can be used for legitimate military, commercial, and recreational purposes but could also be used irresponsibly or with malign intent. The committee continues to believe that critical military personnel, facilities, and assets must be protected from these threats and encourages the Department of Defense (DOD) to develop an array of counter-UAS (CUAS) capabilities, particularly nonkinetic CUAS capabilities that can: identify, monitor, and track UASs; operate passively without interfering with existing military, civilian, and commercial communication systems; and differentiate between authorized and unauthorized UASs.

Where appropriate, the committee supports increased funding to meet Joint Urgent Operational Needs validated by the Joint Staff concerning CUAS solutions as well as the continued development of CUAS tactics, techniques, and procedures to protect DOD personnel, facilities, and assets. Additionally, the committee recognizes the importance of developing necessary legal authorities to manage a complex domestic environment. It notes with appreciation DOD's efforts to inform and collaborate with other relevant departments and agencies following the adoption of section 1692 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) and urges the continued sharing of best practices across the government. The committee expects that the DOD will continue to coordinate with the Department of Transportation and the Federal Aviation Administration, as required by section 1692 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

### **Cyber attacks by the Russian Federation and People's Republic of China on Department of Defense affiliates**

The committee remains concerned about reports that cyber actors employed by or affiliated with the Russian Federation and People's Republic of China have targeted Department of Defense (DOD) systems, the systems of DOD contractors working on sensitive U.S. military technology, and the personal communications of U.S. military personnel. While the DOD has taken steps to harden its systems, the committee remains concerned that not enough is being done to detect and protect against attacks by the Russian Federation and People's Republic of China against non-government systems and other less-protected targets affiliated with the Department of Defense.

Therefore, not later than 90 days after the date of the enactment of this Act, the committee directs the Secretary of Defense to submit to the congressional defense committees a report on cyber attacks against the Department of Defense in the previous 24 months by agents or associates of the Russian and Chinese governments against DOD systems, the systems of DOD contractors working on sensitive U.S. military technology, and the personal communications of U.S. military personnel. The report shall describe what actions, if any, the Department is taking or plans to take to protect less-hardened targets against Russian and Chinese cyber operations and any associated legislative authorities required.

### **Defense options for Guam**

The committee notes that the Terminal High Altitude Area Defense (THAAD) system protects the island of Guam against the threat of rogue nations' short-, medium-, and intermediate-range ballistic missiles. The committee strongly supports efforts to augment the defense of Guam with a layered Ballistic Missile Defense System, to include more capable interceptors and sensors against these rogue threats. As the Department of Defense continues to work on the Missile Defense Review, the committee encourages the Department to consider the addition of diverse missile defenses that would complement the THAAD system and provide a layered defense to ensure protection against more complex threats, such as cruise and hypersonic missiles.

### **Department of Defense efforts to cooperate with Department of Homeland Security Fusion Centers**

The committee encourages the Secretary of Defense to consider coordinating with the other relevant Federal Government departments and agencies and each State that has a National Guard with a defensive cyber operations element to establish regionally-focused public-private cooperative agreements or cross-functional task-forces, responsible for the creation of strategies to coordinate and share information among local, regional, and national entities, both public and private, in order to protect vital assets in the cyber realm. This cooperation might leverage divergent skillsets, extant public-private partnership relationships, and high-performing Federal Government assets in the joint defense of public and private systems. These cross-functional task-forces could comprise National Guard units, Department of Homeland Security (DHS) State and

Major Urban Area Fusion Centers, and private sector companies with significant cybersecurity equities and assets—in particular, in critical infrastructure sectors—thereby strengthening active participation and sharing of information, integrating threat mitigation strategies, and growing the cyber network through shared experience.

Pursuant to this kind of coordination, the committee directs the Secretary of Defense to submit a report to the congressional defense committees no later than 180 days after the date of enactment of this Act on opportunities and efforts underway to cooperate with DHS fusion centers and State assets in cybersecurity. This report should relay: (1) The extant collaboration between National Guard units, the rest of the public sector, and the private sector in advancing cybersecurity across their aggregated assets; (2) Planned cooperation along these lines; and (3) The Secretary's assessment of opportunities in cooperation in red-teaming, incident response, data-sharing, provision of technical expertise, common cybersecurity standards, and attachment to DHS State and Major Urban Area Fusion Centers.

#### **Digital High Frequency Global Communications System**

The committee is aware that the Air Force's High Frequency Global Communications System (HFGCS) and the Navy's messaging system are both transitioning to digital operations as part of the modernization of the nuclear command, control, and communications enterprise. The committee is also aware that the interface between these two message traffic systems currently relies on analog routing technology, which will become unsupportable and must be replaced. However, the committee is concerned that the Air Force does not currently provide sufficient oversight of the HFGCS program relative to the importance of its mission in disseminating emergency action messages world-wide.

Therefore, the committee directs the Secretary of the Air Force, in consultation with the Commander, U.S. Strategic Command, to provide a report to the congressional defense committees on the organization and management of the HFGCS no later than March 15, 2019. The report shall include the conversion of the system to digital operations as well as the interface with Navy systems.

#### **Diversified access to space with Federal Aviation Administration-licensed spaceports**

The committee continues to recognize the unique importance of U.S. Federal Aviation Administration-licensed spaceports and, when appropriate, encourages the use of such spaceports and launch and range complexes for mid-to-low inclination orbits or polar high-inclination orbits in support of national security space priorities. There are a number of spaceports that are already developed or under development, including in New Mexico, Alaska, Oklahoma, Virginia, Texas, and Arizona.

As the Department of Defense (DOD) and future national security space missions begin to prioritize the use of smaller, less expensive satellites and launch vehicles for rapid reconstitution and resilience, the DOD should assess what benefit nontraditional spaceports may offer in terms of cost and flexibility.

The Department of Defense and future national security space missions are focused on using smaller, less expensive satellites and launch vehicles for rapid reconstitution and resilience. Spaceports have proven small launch capability and offer the U.S. government less costly launch sites and services for these missions and an alternative to Vandenberg Air Force Base, using commercial business practices to expedite DOD test and development programs across a variety of mission sets and a variety of launch and landing methods.

The committee believes that these federally-licensed, non-federally-owned launch facilities—including the Spaceport America in New Mexico, Pacific Spaceport Complex-Alaska (PSCA), the Mid-Atlantic Regional Spaceport (MARS), and Oklahoma Air & Space Port—are available to help meet the requirements for the national security space program from the DOD, Air Force Space Command, the Space Rapid Capabilities Office, and the Missile Defense Agency (MDA). The committee notes that such spaceports improve the resiliency of U.S. launch infrastructure and help ensure consistent access to space to support national security space priorities.

The PSCA has supported numerous launches for Air Force Space Command including specific national security launches. It remains the only commercial polar launch range available in the United States, offering both orbital and sub-orbital capabilities. A state-of-the-industry spaceport on Kodiak Island, Alaska, PSCA provides access to space for vital government and commercial interests. The committee supports the Missile Defense Agency's plan to conduct tests of the Terminal High Altitude Area Defense (THAAD) system from the PSCA and encourages the DOD, where appropriate, to consider expanding the use of federally-licensed, non-federally-owned launch facilities to conduct national security launches and U.S. and foreign missile tests.

The Pacific Spaceport Complex-Alaska supported the Space and Missile Defense Command Advanced Hypersonic test launch in 2014 and has both the facilities and range to support a variety of other multi-service hypersonic tests. U.S. Strategic Command is focused on developing a resilient response force that has enhanced capabilities and that can respond to an adversary. The PSCA has become a force multiplier in being the alternative west coast range to Vandenberg Air Force Base, providing additional capacity to test national security missions from an existing spaceport.

The Mid-Atlantic Regional Spaceport at Wallops Island, Virginia provides medium-class and small-class launch capabilities for the Department. It has launched numerous missions for the DOD with its agency partners, Air Force Space Command, the Operationally Responsive Space Office, and the MDA. The MARS provides assured/responsive access to mid-to-low inclination orbits for payloads up to 15,300 lbs. The committee supports the Air Force/National Reconnaissance Office's planned launch of the L-111 mission from the MARS by the end of 2018. The MARS provides additional proven east coast capacity for national security payloads, launches, flights of hypersonic vehicles, and other DOD test programs.

The Oklahoma Air & Space Port, near Bums Flat, Oklahoma, is the only space port in the United States to have a civilian Federal Aviation Administration-approved spaceflight corridor in the Na-

tional Airspace System. This spaceflight corridor is unique because it is not within military operating areas nor within restricted airspace, which provides an operational capability for space launch operations and associated industries specialized in space-related activities.

Spaceport America in New Mexico is a licensed inland spaceport that already provides surface-to-space open sky launches landing in restricted flight zones. The New Mexico Spaceport is located next to White Sands Missile Range (WSMR) where the DOD controls the only restricted air space in the country besides the White House. The committee notes that the Department has studied hypervelocity testing at White Sands Missile Range and its neighbor, Spaceport America, which has the horizontal and vertical launch and landing capacities that hypervelocity vehicles require. WSMR is preparing environmental impact statements for inland flight corridors that will be able to provide apogee-to-end-game sub-orbital instrumented flight solutions.

The committee believes that it is also important for the Department to diversify its launch options and capabilities to include inland sites. From a national security perspective, a secure multimodal spaceport is advantageous for future hypervelocity development. Significant investments have been made at inland space ports, which already have the infrastructure in place to accommodate smaller space launches for the Department.

The committee also directs the Air Force to conduct an assessment of small launch providers to determine what payloads are appropriate for launch and a plan for utilizing these providers in future launches at these spaceports. The committee directs the Air Force to brief the congressional defense committees on this assessment within 90 days of enactment of this Act.

#### **Early Warning Radar upgrades**

The committee notes an evolution of emerging space, ballistic missile, and hypersonic threats from a growing number of countries. The committee also notes that U.S. Strategic Command (STRATCOM) has established operational requirements to utilize the latest advancements in early warning radar technology to ensure that the United States remains capable of detecting, classifying, and tracking incoming threats as soon as possible. While the committee supports the Air Force's plan to add capabilities to the Ballistic Missile Early Warning System and Precision Acquisition Vehicle Entry Phased Array Warning System, it is critical that detection range, target classification, tracking accuracy, and cost-effective operations are prioritized and funded as part of the initial upgrades to meet current and emerging requirements.

The committee understands that early warning radar platforms sold to U.S. partners include significant technological advancements beyond those included in current U.S. systems. The committee feels that it is imperative that STRATCOM leverage technologies already developed that are currently utilized by U.S. partners.

Therefore, the committee directs the Secretary of the Air Force to provide a report to the congressional defense committees, within 180 days of enactment of this Act, detailing possible upgrades of

U.S. early warning radars to meet evolving threats beyond those already being addressed by the Air Force Space and Missile Systems Center. The report shall include a roadmap required to achieve state-of-the-art performance at U.S. early warning radar sites consistent with that of U.S. partners, including radar sensitivity and energy efficiency.

### **Importance of Naval Nuclear Propulsion Program to United States strategic deterrence**

The committee has great interest in actions by the Department of Defense to develop, build, and deploy the *Columbia*-class ballistic missile submarine. The vessels in this class will be the latest nuclear-powered ships, continuing a distinguished line of technological advancement fostered by Admiral Hyman Rickover. In particular, the committee notes the important role of the Naval Nuclear Propulsion Program, also known as Naval Reactors, in the *Columbia* program. Naval Reactors' mission is to ensure the safe, reliable, and long-lived operation of U.S. Navy nuclear powered ships. This in turn ensures the viability of the undersea leg of the American nuclear deterrence triad, of which the *Columbia*-class submarines will be a critical piece.

The committee notes that in the development of the *Columbia*-class submarines, the Navy is confronting an aggressive schedule and a certain level of technological risk. The committee therefore encourages Naval Reactors to renew its efforts in the program, particularly after experiencing difficulties in the manufacturing process and inadequate oversight of contractors, to ensure that schedule and technology risks are managed in accordance with best practices. The committee also urges Naval Reactors to ensure that the training of officer and enlisted personnel for nuclear power jobs continues to meet the highest standards.

### **Laser communications**

The committee supports efforts to develop laser communications systems that enable the demonstration of secure, covert, anti-jam, very high data rate transmissions using laser communications. High data rate laser communications cross-link systems are essential to a proliferated satellite constellations architecture. The next critical challenge for laser communications is the implementation into rugged, lower cost, smaller packages for long-life, high-reliability satellite and airborne applications critical to intelligence, surveillance, and reconnaissance (ISR), other national security applications, and commercial satellite constellations.

The committee supports the development and demonstration of high-reliability, rugged laser communications cross-link systems. Doing so will help leverage existing prototypes for military applications as a proof-of-concept for an enhanced layer of resilience for missile warning, navigation, communications, weather, ISR, and other Department of Defense space applications.

### **Launch vehicle reusability**

The committee notes that the prospect of launch vehicle reusability could have considerable cost savings for the taxpayer. The committee believes equal consideration of reusable and ex-

pendable launch vehicles should be given in all future solicitations for which a reusable launch vehicle is technically capable. The committee directs the Secretary of the Air Force to provide a report to the congressional defense committees no later than January 31, 2019, on the Air Force's plan for the use of reusable launch vehicles.

#### **Layered ballistic missile defense**

The committee notes that the current Ballistic Missile Defense System (BMDS) protects the entire United States homeland, including Hawaii, from the limited ballistic missile threats of rogue nations. The committee strongly supports efforts to bolster the defense of the homeland with a layered BMDS, to include additional discrimination sensors and more capable interceptors, against such threats. Because of its location and the trajectories of potential threats, Hawaii is uniquely positioned in this layered defense. As the committee awaits the outcomes of the Department of Defense's Missile Defense Review, the committee urges the Department to continue to ensure defense of the homeland, including Hawaii, against all ranges of cruise and ballistic missile threats, including increasingly complex threats, to include hypersonic missiles.

#### **Live fire training on missiles nearing demilitarization**

The committee is aware that the Navy's leadership desires additional fleet readiness training, including live-firing of missiles in order to provide sailors with relevant and realistic training while also thoroughly exercising ship systems prior to deployment. Therefore, the committee directs the Secretary of the Navy to conduct a study that considers the use of SM-3 missiles that are nearing demilitarization in fleet live fire testing exercises. The Navy should determine if reprogramming funding meant for demilitarization for these missiles would be representative of the cost for fleet readiness training, how many missiles the Navy would need for testing, and if the missile is capable of certain necessary software changes to be used in a fleet live fire testing exercise. The committee directs the Secretary of the Navy to submit a report to the committee, no later than January 1, 2019, with the results of the study.

#### **Long-term plan for weapons storage facilities**

The committee understands that the Air Force plans to construct new weapons storage facilities (WSFs) for storage and maintenance of nuclear weapons to replace the current facilities at Air Force bases that support nuclear operations. These WSFs will also be required at the bases that the Air Force chooses as bed-down locations for the B-21 bomber. The committee supports the improvements in safety, security, and capability that the Air Force expects to gain through the new facilities but is concerned that the Air Force is currently unable to answer questions about: (1) The different requirements for WSFs at B-21 and B-52 bomber bases, missile bases, and bases that host a mix of systems; (2) The appropriate balance between cost and risk in design; and (3) Basic design information about the one WSF already underway at FE Warren Air Force Base. The committee is also concerned that the Air Force is not appropriately synchronizing the construction of these WSFs

with the plans for basing of the B-21 bomber and other force structure considerations.

Therefore, the committee directs the Secretary of the Air Force to provide to the congressional defense committees no later than March 15, 2019, a long-term plan for the recapitalization of weapons storage capacity for nuclear weapons at Air Force bases in the continental United States. The plan shall include current cost estimates for each site, taking into account the differences in capacity required depending on the systems at each bases, as well as a master schedule that is sequenced with the Air Force's plan for the rollout of the B-21 bomber.

### **Mapping of Department of Defense base stations**

The committee urges the Department of Defense to reduce and mitigate the risk from surreptitious mapping of sensitive locations by personal devices, particularly with respect to mapping based on Wi-Fi networks and other wireless devices. The committee encourages the Department of Defense to work in consultation with industry, the Department of Homeland Security, the Department of Transportation, and other relevant agencies to review the unintended consequences of these services and develop and implement any technical or operational precautions to prevent the collection of wireless network information and mitigate the risk associated with such activities. The committee directs the Secretary of Defense to submit a report to the defense committees no later than 1 year after the date of enactment of this Act on any actions taken to reduce and mitigate the risks associated with the mapping of sensitive locations by personal devices.

### **Matters related to Department of Defense cyber ranges**

The committee is concerned about two challenges that the Department of Defense (DOD) faces with respect to its cyber ranges: (1) The limitations posed by traditional data storage and information technology paradigms; and (2) those offered by extant software licensing practices.

The DOD maintains a significant number of ranges for training, exercises, mission rehearsal, and test and evaluation, but capacity is limited, and resources are relatively scarce. Meanwhile, expensive modernization of existing ranges is ongoing but faces the ever-present problem of obsolescence. To consolidate its training development resources, the Secretary of Defense designated the Army as the executive agent for developing and maintaining a persistent training environment equal to the needs of the Cyber Mission Forces.

It is expensive to maintain technological parity in range infrastructure and emulation capability with real networks in foreign countries, the commercial networks making up the bulk of cyberspace, and the networks of the DOD, which each and collectively evolve rapidly. It is also difficult and costly for any single or federated government ranges to achieve the scale necessary for unit training and large-scale exercise scenarios. Desirable attributes for a cyber range are the scale and fidelity of authentic networks and the ability to rapidly configure and reconfigure computing environments through virtualization.

Modern commercial cloud offerings provide such capabilities. In addition, as a shared resource, clouds spread costs, are constantly modernized, and are extensible on demand. The only element that may not yet be natively available on commercial clouds is a network virtualization capability, which is clearly important for a cyber range, but such technology is available and could be integrated.

The DOD is embarking on a major cloud services initiative, with commercial capabilities to be available at all levels of classification. This initiative or other ongoing acquisitions could provide a platform for the Persistent Training Environment and all the other range requirements.

Software licenses are another major challenge for the effective functioning of DOD cyber ranges. The DOD's information technology purchases do not as a rule include the rights to use software in a virtualized test or training environment. Moreover, pricing for such rights under normal licensing agreements would be unaffordable-or would prevent the Department from achieving anything near the scale and fidelity needed to clone varied networks for effective training and exercises.

Accordingly, the committee directs the Assistant Secretary of Defense for Homeland Defense and Global Security, who serves as the Principal Cyber Advisor (PCA), to conduct a study of the feasibility of transitioning the DOD's cyber ranges to an enterprise service on commercial cloud, in consultation with the major stakeholders, including the Test Resource Management Center, the Chief Information Officer (CIO), the Army, U.S. Cyber Command, and the Director of Operational Test and Evaluation. The PCA shall also consult with the Cloud Executive Steering Group.

The committee also directs the PCA and the CIO to jointly assess the software licensing practices in the Department and consult with industry to identify viable license solutions that give the DOD the right to unlimited virtualized test and training instances. The committee encourages the DOD to use its considerable leverage in buying power in negotiation of such solutions.

The committee directs the PCA to update the committee on these assessments within 180 days of the enactment of this Act.

### **Microsegmentation**

The committee supports the increased use of automation to provide a systematic and automated response to cybersecurity breaches and network and system outages. The committee recognizes the potential benefit of implementing automation in support of a layered defensive strategy that includes logical segmentation of networks within the data center (microsegmentation) and of using automation in data and application protection. The committee therefore directs the Secretary of Defense to provide a briefing to the congressional defense committees no later than March 1, 2019, on the Department's long-term plan for utilizing such automation capabilities and current fielding strategy.

**Modular array for the direct distribution of integrated energy on small satellites**

The space industry is currently undergoing a substantial transformation as next-generation, smaller, low-cost satellites become increasingly available. These small satellites are capable of being quickly launched in response to a rapidly emerging need or threat. Unfortunately, key subsystems are not yet fully developed, thus hampering the wide-scale deployment of small satellites. Conventional satellite technology relies on the manufacturing and assembly of three independent subsystems for power: (1) solar panels, (2) a battery pack to store the solar energy, and (3) power electronics. Each of these subsystems is manufactured independently of one another and then fitted together at an integrator. The committee is interested in better understanding if combining the three subsystems into one single system will result in lower production costs and increased performance. In doing so, modular, deployable solar arrays have significant potential to accelerate the deployment of small satellites for critical Department of Defense missions.

The committee therefore encourages the Air Force to explore modular arrays and utilize high strain composites and novel electric propulsion systems to reduce the cost and improve the performance of small satellites. The committee directs the Air Force to provide a briefing to the congressional defense committees on new small satellite power generation initiatives within 60 days.

**Nuclear Command, Control, and Communications Program Executive Office staffing**

The committee commends the Air Force's efforts to fully staff the Nuclear Command, Control, and Communications (NC3) Program Executive Office at Hanscom Air Force Base. Timely upgrade of the NC3 program is critical to assure continued and resilient security of the national command authority. The committee encourages the Air Force to use all congressionally-approved flexible hiring authorities and incentives to attract qualified candidates to these positions.

**On-orbit satellite servicing technology**

The committee believes that satellite servicing could have promising applications for the Department of Defense. Accordingly, the committee directs the Secretary of Air Force to provide a briefing to the congressional defense committees by December 1, 2018, on a plan regarding the applicability of satellite servicing capabilities. The briefing shall include: a prioritized list, with accompanying rationale, of specific operational and planned Department of Defense assets that could benefit from satellite servicing missions; an assessment of the feasibility and advisability of ensuring that future national security space satellites and spacecraft are compatible with commercial in-orbit servicing capabilities; and a discussion of whether and how to integrate satellite servicing capabilities as an integral part of operational resilience into the Joint Capabilities Integration Development System for identifying requirements, the Planning, Programming, Budgeting and Execution System for allocating resourcing and budgeting, and the Defense Acquisition System for developing and buying items or services.

**Portable satellite data receiver suites for deployed warfighters**

The committee notes that the United States Air Force Research Laboratory's (AFRL) Small Business Initiative Research has provided funding for the development of a unique satellite communication receive suite for warfighters in need of reliable, portable connection to the Global Broadcast System (GBS). The committee is aware that the Department of Defense (DOD) Joint Program Office now includes these portable receive suites as an approved solution for receive technology with Military Satellite Communications on the existing GBS network. The committee encourages the DOD and the Air Force to ensure that these suites are made available to the warfighter. The committee directs the Secretary of the Air Force as the executive agent to provide a briefing to the congressional defense committees on the strategy for GBS man-portable receive suites no later than 90 days after enactment of this Act.

**Review of connected devices on military installations**

The Committee urges the Secretary of Defense to identify and address risks related to servicemembers' use of personal devices while deployed—especially with respect to the potential tracking or identification of sensitive locations and the possibility that this information is stored in foreign data centers. The committee also urges the Department of Defense to evaluate respective foreign governments' ability to access information from U.S. servicemembers' personal devices during their deployment, the privacy protections and legal processes available to affected persons, and educational and directive measures that the Department could take to minimize these vulnerabilities.

**Space Rapid Capabilities Office**

The committee notes that the Air Force's budget request indicates a full embrace of the need to rapidly develop and field new space capabilities in order to outpace the threat in 2025 and dominate in 2028. The newly re-designated Space Rapid Capabilities Office (Space RCO) will serve to meet this aggressive goal and timeline and will seek to replicate the culture and processes of the current Air Force Rapid Capabilities Office. The additional funding requested will enable the Space RCO to quickly meet new billeting requirements under consideration and will allow the Space RCO to accelerate projects that are considered urgent by the Air Force and Joint Forces Command.

The committee continues to recognize the need to develop a more responsive and resilient space architecture and supports the vision of the Space Rapid Capabilities Office to rapidly field new space capabilities. The committee is concerned, however, that there is a lack of Sensitive Compartmentalized Information Facility (SCIF) space that can be utilized by potential partners near the Air Force's Space RCO. Partnerships with commercial aerospace, including non-traditional and startup aerospace companies, will enable the Space RCO to carry out its mission to rapidly deploy assets to space. The committee directs the Air Force Space Command to assess within 180 days of enactment the need and, if appropriate, to submit a plan to the congressional defense committees for

SCIF space adjacent to or near the Space RCO, which could also be used by appropriately cleared commercial partners in support of Space RCO missions. The plan should include input from the Space RCO, Space and Missile Systems Center, Air Force Space Command, and other customers, including business entities that may utilize the new SCIF space.

#### **Transition of the Strategic Automatic Control and Communications System to the Navy Nova Communications System**

The committee understands that the Air Force is currently considering various modifications to the existing Strategic Automatic Control and Communications System (SACCS), which is a critical program within the nuclear command, control, and communications enterprise as the principal means for transmission of data and emergency action messages to Air Force locations around the world. The committee is concerned that various connected systems will not be replaced in a timely manner without disruption of the mission.

Therefore, the committee directs the Secretary of the Air Force, in consultation with the Secretary of the Navy and the Chief Information Officer of the Department of Defense, to provide a report to the congressional defense committees no later than March 15, 2019, containing a plan with: (1) Detailed timelines to transition parts of the SACCS mission to the Navy Nova messaging system; (2) The timeline for the replacement of the Promina router technology, including date and location; (3) The vulnerabilities in the transmission of data as SACCS front end systems are replaced by the Nova system; and (4) The Air Force's plans to mitigate those vulnerabilities.

#### **United States-North Korea nuclear and missile threat reduction**

The committee continues to monitor the progress of talks between the United States and North Korea. The committee is aware that North Korean nuclear and missile programs, both of which pose significant unresolved threats to the United States and our allies, have substantial physical infrastructure and significant human capital associated with them and that North Korea remains heavily involved in illegal trade. The committee is also aware of the history of the Cooperative Threat Reduction program, which provided, and continues to provide, funding and expertise to partner governments in the former Soviet Union to secure and eliminate weapons of mass destruction at the source.

Given the nature of North Korean threats and the scope of effort that would be required to reduce them, the committee directs the Department of Defense to provide to the congressional defense committees no later than March 29, 2019, a report, in consultation with the Department of Energy (DOE), on the estimate of resources that would be required for the denuclearization of North Korea and on how the DOE plans to moderate potential nuclear and missile proliferation through transfer of technology, materials, and scientific know-how.



## **TITLE XVII—COMMITTEE ON FOREIGN INVESTMENT IN THE UNITED STATES**

### **Short title (sec. 1701)**

The committee recommends a provision that would establish the short title of this section as “The Foreign Investment Risk Review Modernization Act of 2018.”

### **Sense of Congress (sec. 1702)**

The committee recommends a provision that would express the sense of the Congress regarding the benefits of foreign investment in the United States and continuing the United States’ commitment to open and fair investment policy, the shifting threats to national security and the need to modernize The Committee on Foreign Investment in the United States (CFIUS) and export controls to address those threats, the critical role of CFIUS in protecting national security and need for adequate resources and for more robust international outreach to allies to help them establish their own foreign investment screening regimes, the need to collaborate with allies to develop stronger multilateral export controls, and additional factors CFIUS may consider in reviewing transactions.

### **Definitions (sec. 1703)**

The committee recommends a provision that would amend section 721(a) of the Defense Production Act of 1950 (Public Law 81–774) to update terms pertaining to the Committee on Foreign Investment in the United States (CFIUS) statute and add several new terms. This provision would expand the purview of CFIUS by explicitly adding four new types of covered transactions, including: (1) Any non-passive investment by a foreign person in any U.S. critical technology or critical infrastructure company; (2) Any change in a foreign investor’s rights regarding a U.S. business; (3) Any other transaction, transfer, agreement or arrangement designed to circumvent/evade CFIUS; and (4) The purchase, lease, or concession by or to a foreign person of certain real estate in close proximity to military or other sensitive national security facilities. This provision would also allow CFIUS to exempt investments from countries meeting certain criteria from the new covered transactions.

### **Acceptance of written notices (sec. 1704)**

The committee recommends a provision that would amend section 721(b)(1)(c)(i) of the Defense Production Act of 1950 (Public Law 81–774) to update the rules governing the acceptance of written notices.

**Inclusion of partnership and side agreements in notice (sec. 1705)**

The committee recommends a provision that would amend section 721(b)(1)(C) of the Defense Production Act of 1950 (Public Law 81-774) to require that any written notice or filing to include copies of all related partnership agreements, integration agreements, or other side agreements relating to transactions, including any related to the transfer of intellectual property.

**Declarations for certain covered transactions (sec. 1706)**

The committee recommends a provision that would amend section 721(b)(1)(C) of the Defense Production Act of 1950 (Public Law 81-774) to create declarations that would serve as light filings, limited to five pages in length, that must be filed in advance of completing the transaction. This provision would allow any party to voluntarily file a declaration as an alternative to submitting a notice and would also require parties to file a declaration for certain investments where a foreign government has a substantial interest.

**Stipulations regarding transactions (sec. 1707)**

The committee recommends a provision that would amend section 721(b)(1)(C) of the Defense Production Act (Public Law 81-774) to allow all parties to a transaction to stipulate, in a notice or a declaration, that is a covered transaction and, if so, that it is also a foreign government-controlled transaction.

**Authority for unilateral initiation of reviews (sec. 1708)**

The committee recommends a provision that would amend section 721(b)(1) of the Defense Production Act of 1950 (Public Law 81-774) to confirm the circumstances under which the Committee on Foreign Investment in the United States (CFIUS) may unilaterally initiate a review, as well as how a transaction attains safe harbor status.

**Timing for reviews and investigations (sec. 1709)**

The committee recommends a provision that would amend section 721(b) of the Defense Production Act of 1950 (Public Law 81-774) to give the Committee on Foreign Investment in the United States (CFIUS) extra time to review each transaction by extending the overall review period from 30 days to 45 days and authorizes CFIUS to extend any investigation for one 30-day period in extraordinary circumstances, at the request of the head of a lead agency.

**Monitoring of non-notified and non-declared transactions (sec. 1710)**

The committee recommends a provision that would amend section 721(b)(1) of the Defense Production Act of 1950 (Public Law 81-774) to require the Committee on Foreign Investment in the United States to establish a mechanism to identify any covered transactions for which a notice or declaration has not been filed and on which information is reasonably available.

**Submission of certifications to Congress (sec. 1711)**

The committee recommends a provision that would amend section 721(b)(3)(C) of the Defense Production Act of 1950 (Public Law 81–774) to enhance congressional oversight by requiring the Committee on Foreign Investment in the United States (CFIUS) to submit its certifications regarding transactions to both the Senate Select Committee on Intelligence and House Permanent Select Committee on Intelligence.

**Analysis by Director of National Intelligence (sec. 1712)**

The committee recommends a provision that would amend section 721(b)(4) of the Defense Production Act of 1950 (Public Law 81–774) to require the Director of National Intelligence, for each National Security Threat Assessment (NSTA), to identify any recognized intelligence collection gaps, update the NSTA upon require by a lead agency for any past cleared transaction involving a mitigation agreement, and submit the NSTA to the Senate Select Committee on Intelligence and House Permanent Select Committee on Intelligence after conclusion of action by the Committee on Foreign Investment in the United States.

**Information sharing (sec. 1713)**

The committee recommends a provision that would amend section 721(c) of the Defense Production Act of 1950 (Public Law 81–774) to enhance collaboration and coordination with United States allies and partners by allowing the disclosure of information to any domestic or foreign governmental entity, under the direction of the chairperson, if necessary for national security and pursuant to appropriate confidentiality and classification arrangements, or when the parties have consented for information to be disclosed to third parties.

**Action by the President (sec. 1714)**

The committee recommends a provision that would amend section 721(d) of the Defense Production Act of 1950 (Public Law 81–774) to confirm the authority of the President to suspend or prohibit a transition or require divestment when necessary to protect national security.

**Judicial review (sec. 1715)**

The committee recommends a provision that would amend section 721(e) of the Defense Production Act of 1950 (Public Law 81–774) to clarify that civil action challenges against Committee on Foreign Investment in the United States actions and findings may only be brought in the United States Court of Appeals for the District of Columbia Circuit.

**Membership and staff of Committee (sec. 1716)**

The committee recommends a provision that would amend section 721(k) of the Defense Production Act of 1950 (Public Law 81–774) to clarify the rules that apply to the appointment and hiring of members and staff of the Committee on Foreign Investment in the United States.

**Actions by the Committee to address national security risks  
(sec. 1717)**

The committee recommends a provision that would amend section 721(1) of the Defense Production Act of 1950 (Public Law 81-774) to grant the Committee on Foreign Investment in the United States (CFIUS) the authority to suspend a transaction during a review or investigation, use mitigation agreements and conditions to address situations where the parties have chosen to abandon a transaction without a presidential order, and impose interim mitigation agreements and conditions for national security risks posed by completed transactions while they are undergoing CFIUS review.

**Modification of annual report and other reporting requirements (sec. 1718)**

The committee recommends a provision that would amend section 721(m) of the Defense Production Act of 1950 (Public Law 81-774) to require the Committee on Foreign Investment in the United States (CFIUS) to include in its annual report a description of the outcomes of any review and investigations that year, including whether a mitigation agreement was entered into or condition imposed and whether the President took any action.

**Certification of notices and information (sec. 1719)**

The committee recommends a provision that would amend section 721(n) of the Defense Production Act of 1950 (Public Law 81-774) to require that each notice submitted to the Committee on Foreign Investment in the United States be accompanied by a written statement from the parties certifying that the notice or information is accurate, complete, and compliant with the rules.

**Implementation plans (sec. 1720)**

The committee recommends a provision that would require the Secretary of the Treasury and the Secretary of Commerce to develop implementation plans for carrying out relevant sections of this Title and to submit them to Congress within 180 days of enactment of this Act.

**Assessment of need for additional resources for Committee (sec. 1721)**

The committee recommends a provision that would require the President to determine whether and to what extent the expansion of the Committee on Foreign Investment in the United States' (CFIUS) responsibilities would necessitate additional resources for CFIUS and its members to perform their functions, and include the request for any such additional resources for each member agency in the annual budget requests to Congress.

**Funding (sec. 1722)**

The committee recommends a provision that would amend section 721 of the Defense Production Act of 1950 (Public Law 81-774) to establish a fund for the Committee on Foreign Investment in the United States.

**Centralization of certain Committee functions (sec. 1723)**

The committee recommends a provision that would amend section 721 of the Defense Production Act of 1950 (Public Law 81-774) to authorize the Secretary of the Treasury to centralize certain functions of the Committee on Foreign Investment of the United States (CFIUS) to include monitoring non-notified and non-declared transactions, within the Department of Treasury to enhance CFIUS interagency coordination and collaboration.

**Conforming amendments (sec. 1724)**

The committee recommends a provision that would amend section 721 of the Defense Production Act of 1950 (Public Law 81-774) to make technical and conforming changes to the statute.

**Requirements to identify and control the export of emerging and foundational technologies (sec. 1725)**

The committee recommends a provision that would establish an interagency process led by the President to identify emerging and foundational technologies that are not currently subject to export controls and establishes an interagency process to control such technologies.

**Export control enforcement authority (sec. 1726)**

The committee recommends a provision that would enhance and harmonize the Commerce's Bureau of Industry and Security (BIS) export control enforcement authorities with those authorities granted special agents in other law enforcement and investigative agencies by allowing BIS to engage in overseas investigations and undercover penetration activities and also appropriately protects confidentiality of information.

**Prohibition on modification of civil penalties under export control and sanctions laws (sec. 1727)**

The committee recommends a provision that would amend section 721 of the Defense Production Act of 1950 (Public Law 81-774) that would prohibit the President from modifying any civil penalty implemented by the Government of the United States with respect to a Chinese telecommunications company pursuant to a determination that the company has violated and export control or sanctions law of the United States until the dates that is 30 days after the President makes a certification to the appropriate congressional committees.

**Under Secretary of Commerce for Industry and Security (sec. 1728)**

The committee recommends a provision that would rename the position of the Under Secretary of Commerce for Export Administration to the Under Secretary of Commerce for Industry and Security to more properly align the position title with the organization and role.

**Limitation on cancellation of designation of Secretary of the Air Force as Department of Defense Executive Agent for a certain Defense Production Act program (sec. 1729)**

The committee recommends a provision that would bar the Department of Defense from making any change to the Secretary of the Air Force acting as the program manager or executive agent under Title III of the Defense Production Act of 1950 (Public Law 81-774) until Congress explicitly authorizes such a change.

**Review of and report on certain defense technologies critical to the United States maintaining superior military capabilities (sec. 1730)**

The committee recommends a provision that would require a report to Congress, no later than 180 days after the date of the enactment of this Act, from the Secretary of Defense and the Director of National Intelligence on key United States industries and research and development activities critical to maintaining a national security technology capability, where over the next five years it is anticipated a domestic industrial base shortfall will exist and domestic industry cannot or will not provide the needed capacity in a timely manner without assistance authorized in existing statutory authorities enacted for such purposes.

**Briefing on information from transactions reviewed by Committee on Foreign Investment in the United States relating to foreign efforts to influence democratic institutions and processes (sec. 1731)**

The committee recommends a provision that would require the Secretary of the Treasury, no later than 60 days after the date of enactment of this Act, to provide a briefing to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Financial Service of the House of Representatives.

**Effective date (sec. 1732)**

The committee recommends a provision that would establish the date of applicability of the provision contained within this title.

**Severability (sec. 1733)**

The committee recommends a provision that would clarify that any provision of this title is held to be invalid, the remaining provisions and the application of that provision to other persons shall not be affected.

## **DIVISION B—MILITARY CONSTRUCTION AUTHORIZATIONS**

### **Summary and explanation of funding tables**

Division B of this Act authorizes funding for military construction projects of the Department of Defense (DOD). It includes funding authorizations for the construction and operation of military family housing as well as military construction for the reserve components, the Defense Agencies, and the North Atlantic Treaty Organization Security Investment Program. It also provides authorization for the base closure accounts that fund military construction, environmental cleanup, and other activities required to implement the decisions made in prior base closure rounds.

The tables contained in this Act provide the project-level authorizations for the military construction funding authorized in division B of this Act and summarize that funding by account.

The fiscal year 2019 budget requested \$11.4 billion for military construction and housing programs. Of this amount, \$9.4 billion was requested for military construction, \$1.6 billion for the construction and operation of family housing, \$267.5 million for base closure activities, and \$171.1 million for the North Atlantic Treaty Organization Security Investment Program.

The committee recommends authorization of appropriations for military construction, housing programs, and base closure activities totaling \$11.4 billion. The total amount authorized for appropriations reflects the committee's continued commitment to invest in the recapitalization of DOD facilities and infrastructure.

### **Short title (sec. 2001)**

The committee recommends a provision that would designate division B of this Act as the "Military Construction Authorization Act for Fiscal Year 2019."

### **Expiration of authorizations and amounts required to be specified by law (sec. 2002)**

The committee recommends a provision that would establish the expiration date for authorizations in this Act for military construction projects, land acquisition, family housing projects, and contributions to the North Atlantic Treaty Organization Security Investment Program as of October 1, 2023, or the date of enactment of an act authorizing funds for military construction for fiscal year 2023, whichever is later.

### **Effective date (sec. 2003)**

The committee recommends a provision that would provide an effective date for titles XXI through XXVII and title XXIX of October 1, 2018, or the date of enactment of this Act, whichever is later.



## **TITLE XXI—ARMY MILITARY CONSTRUCTION**

### **Summary**

The budget request included authorization of appropriations of \$1.0 billion for military construction and \$707.2 million for family housing for the Army for fiscal year 2019.

The committee recommends authorization of appropriations of \$1.1 billion for military construction for the Army and \$707.2 million for family housing for the Army for fiscal year 2019.

Further details on projects authorized can be found in section 2101 and section 4601 of this Act.

### **Authorized Army construction and land acquisition projects (sec. 2101)**

The committee recommends a provision that would authorize military construction projects for the active component of the Army for fiscal year 2019. The committee recognizes the significant unfunded military construction requirements and has included an additional \$107.6 million for many of these projects. The authorized amount is listed on an installation-by-installation basis.

### **Family housing (sec. 2102)**

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Army for fiscal year 2019. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

### **Authorization of appropriations, Army (sec. 2103)**

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Army authorized for construction for fiscal year 2019. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active component of the Army. The state list contained in this report is the binding list of the specific projects authorized at each location.

### **Extension of authorizations of certain fiscal year 2015 projects (sec. 2104)**

The committee recommends a provision that would extend the authorization contained in section 2101 of the Military Construction Authorization Act for Fiscal Year 2015 (division B of Public Law 113–291) for two projects until October 1, 2019, or the date of the enactment of an act authorizing funds for military construction for fiscal year 2020, whichever is later.

**Extension of authorizations of certain fiscal year 2016 project (sec. 2105)**

The committee recommends a provision that would extend the authorization of a project authorized by section 2101 of the Military Construction Authorization Act for Fiscal Year 2016 (division B of Public Law 114-92) until October 1, 2023, or the date of enactment of an Act authorizing funds for military construction for fiscal year 2024, whichever is later.

## **TITLE XXII—NAVY MILITARY CONSTRUCTION**

### **Summary**

The budget request included authorization of appropriations of \$2.5 billion for military construction and \$419.1 million for family housing for the Department of the Navy for fiscal year 2019.

The committee recommends authorization of appropriations of \$2.6 billion for military construction for the Navy and \$419.1 million for family housing for the Navy for fiscal year 2019.

Further details on projects authorized can be found in section 2201 and section 4601 of this Act.

### **Authorized Navy construction and land acquisition projects (sec. 2201)**

The committee recommends a provision that would authorize Navy and Marine Corps military construction projects for fiscal year 2019. The committee recognizes the significant unfunded military construction requirements and has included an additional \$304.8 million for many of these projects. The authorized amounts are listed on an installation-by-installation basis.

### **Family housing (sec. 2202)**

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Navy for fiscal year 2019. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

### **Improvements to military family housing units (sec. 2203)**

The committee recommends a provision that would authorize the Secretary of the Navy to improve existing family housing units of the Department of the Navy in an amount not to exceed \$16.6 million.

### **Authorization of appropriations, Navy (sec. 2204)**

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Department of the Navy authorized for construction for fiscal year 2019. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active components of the Navy and the Marine Corps. The state list contained in this report is the binding list of the specific projects authorized at each location.



## **TITLE XXIII—AIR FORCE MILITARY CONSTRUCTION**

### **Summary**

The budget request included authorization of appropriations of \$1.7 billion for military construction and \$395.7 million for family housing for the Air Force in fiscal year 2019.

The committee recommends authorization of appropriations of \$1.8 billion for military construction for the Air Force and \$395.7 million for family housing for the Air Force for fiscal year 2019.

Further details on projects authorized can be found in section 2301 and section 4601 of this Act.

### **Authorized Air Force construction and land acquisition projects (sec. 2301)**

The committee recommends a provision that would authorize Air Force military construction projects for fiscal year 2019. The committee recognizes the significant unfunded military construction requirements and has included an additional \$149.2 million for many of these projects. The authorized amounts are listed on an installation-by-installation basis.

### **Family housing (sec. 2302)**

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Air Force for fiscal year 2019. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

### **Improvements to military family housing units (sec. 2303)**

The committee recommends a provision that would authorize the Secretary of the Air Force to improve existing family housing units of the Department of the Air Force in an amount not to exceed \$75.2 million.

### **Authorization of appropriations, Air Force (sec. 2304)**

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Air Force authorized for construction for fiscal year 2019. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active component of the Air Force. The state list contained in this report is the binding list of the specific projects authorized at each location.

**Modification of authority to carry out certain phased project authorized in fiscal years 2015, 2016, and 2017 (sec. 2305)**

The committee recommends a provision that would modify the authorization contained in section 2301(b) of the Military Construction Authorization Act for Fiscal Year 2015 (division B of Public Law 113–291; 128 Stat. 3679) for Royal Air Force Croughton, for JIAC Consolidation Phase 1, the authorization contained in the table in section 2301(b) of the Military Construction Authorization Act for Fiscal Year 2016 (division B of Public Law 114–92; 129 Stat. 1153) for Croughton Royal Air Force, for Joint Intelligence Analysis Complex (JIAC) Consolidation Phase 2, and the authorization contained in the table in section 2301(b) of the Military Construction Authorization Act for Fiscal Year 2017 (division B of Public Law 114–328; 130 Stat. 2697) for Royal Air Force Croughton, for JIAC Consolidation Phase 3, to change the location to United Kingdom, Unspecified.

**Modification of authority to carry out certain fiscal year 2017 project (sec. 2306)**

The committee recommends a provision that would modify the authorization contained in section 2301(a) of the Military Construction Authorization Act for Fiscal Year 2017 (division B of Public Law 114–328) for construction of a basic military training recruit dormitory at Joint Base San Antonio, Texas, to include a 26,537 square meter dormitory.

**Modification of authority to carry out certain fiscal year 2018 project (sec. 2307)**

The committee recommends a provision that would modify the authority contained in section 2301(a) of the Military Construction Authorization Act for Fiscal Year 2018 (division B of Public Law 115–91) for the construction of a cyberwork facility at the United States Air Force Academy, Colorado, to include a facility of up to 4,462 square meters.

**Additional authority to carry out certain fiscal year 2019 projects (sec. 2308)**

The committee recommends a provision that would allow the Secretary of the Air Force to carry out certain military construction projects using funds available for research, development, test, and evaluation.

## **TITLE XXIV—DEFENSE AGENCIES MILITARY CONSTRUCTION**

### **Summary**

The budget request included authorization of appropriations of \$2.7 billion for military construction for the Defense Agencies for fiscal year 2019.

The committee recommends authorization of appropriations of \$2.4 billion for military construction for the Defense Agencies for fiscal year 2019.

### **Authorized defense agencies construction and land acquisition projects (sec. 2401)**

The committee recommends a provision that would authorize military construction projects for the defense agencies for fiscal year 2019. The authorized amounts are listed on an installation-by-installation basis.

### **Energy Resilience and Conservation Investment Program (sec. 2402)**

The committee recommends a provision that would authorize the Secretary of Defense to carry out energy resilience and conservation projects. The budget request included \$150.0 million for the Energy Resilience and Conservation Investment Program (ERCIP). The committee recommends an increase of \$84.4 million.

### **Authorization of appropriations, defense agencies (sec. 2403)**

The committee recommends a provision that would authorize appropriations for the military construction and family housing projects of the Defense Agencies authorized for construction for fiscal year 2019. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the defense agencies. The state list contained in this report is the binding list of the specific projects authorized at each location.

### **Extension of authorizations of certain fiscal year 2015 projects (sec. 2404)**

The committee recommends a provision that would extend the authorization contained in section 2401 of the Military Construction Authorization Act for Fiscal Year 2015 (division B of Public Law 113–291) for four projects until October 1, 2019, or the date of the enactment of an Act authorizing funds for military construction for fiscal year 2020, whichever is later.

**Authorization of certain fiscal year 2018 project (sec. 2405)**

The committee recommends a provision that would amend section 2401(a) of the National Defense Authorization Act for Fiscal Year 2018 (division B of Public Law 105–91) by authorizing the Fort Bliss Blood Processing Center for \$8,300,000.

## **TITLE XXV—INTERNATIONAL PROGRAMS**

### **Summary**

The Department of Defense requested authorization of appropriations of \$171.1 million for military construction in fiscal year 2019 for the North Atlantic Treaty Organization (NATO) Security Investment Program. The committee recommends the requested amount.

### **Subtitle A—North Atlantic Treaty Organization Security Investment Program**

#### **Authorized NATO construction and land acquisition projects (sec. 2501)**

The committee recommends a provision that would authorize the Secretary of Defense to make contributions to the North Atlantic Treaty Organization Security Investment Program in an amount equal to the sum of the amount specifically authorized in section 2502 of this title and the amount of recoupment due to the United States for construction previously financed by the United States.

#### **Authorization of appropriations, NATO (sec. 2502)**

The committee recommends a provision that would authorize appropriations of \$171.1 million for the U.S. contribution to the North Atlantic Treaty Organization Security Investment Program for fiscal year 2019.

### **Subtitle B—Host Country In-Kind Contributions**

#### **Republic of Korea funded construction projects (sec. 2511)**

The committee recommends a provision that would authorize the Secretary of Defense to accept four military construction projects totaling \$518.6 million from the Republic of Korea as in-kind contributions.



## **TITLE XXVI—GUARD AND RESERVE FORCES FACILITIES**

### **Summary**

The Department of Defense requested authorization of appropriations of \$467.4 million for military construction in fiscal year 2019 for facilities for the National Guard and reserve components.

The committee recommends authorization of appropriations of \$661.8 million for military construction in fiscal year 2019 for facilities for the National Guard and reserve components. The detailed funding recommendations are contained in the state list table included in this report.

Further details on projects authorized can be found in the tables in this title and section 4601 of this Act.

### **Subtitle A—Project Authorizations and Authorization of Appropriations**

#### **Authorized Army National Guard construction and land acquisition projects (sec. 2601)**

The committee recommends a provision that would authorize military construction projects for the Army National Guard for fiscal year 2019. The committee recognizes the significant unfunded military construction requirements and has included an additional \$126.0 million for many of these projects. The authorized amounts are listed on an installation-by-installation basis.

#### **Authorized Army Reserve construction and land acquisition projects (sec. 2602)**

The committee recommends a provision that would authorize military construction projects for the Army Reserve for fiscal year 2019. The authorized amounts are listed on an installation-by-installation basis.

#### **Authorized Navy Reserve and Marine Corps Reserve construction and land acquisition projects (sec. 2603)**

The committee recommends a provision that would authorize military construction projects for the Navy Reserve and Marine Corps Reserve for fiscal year 2019. The authorized amounts are listed on an installation-by-installation basis.

#### **Authorized Air National Guard construction and land acquisition projects (sec. 2604)**

The committee recommends a provision that would authorize military construction projects for the Air National Guard for fiscal year 2019. The authorized amounts are listed on an installation-by-installation basis.

**Authorized Air Force Reserve construction and land acquisition projects (sec. 2605)**

The committee recommends a provision that would authorize military construction projects for the Air Force Reserve for fiscal year 2019. The authorized amounts are listed on an installation-by-installation basis.

**Authorization of appropriations, National Guard and Reserve (sec. 2606)**

The committee recommends a provision that would authorize appropriations for the reserve component military construction projects authorized for construction for fiscal year 2019 in this Act. This provision would also provide an overall limit on the amount authorized for military construction projects for each of the reserve components of the military departments. The state list contained in this report is the binding list of the specific projects authorized at each location.

**Subtitle B—Other Matters**

**Modification of authority to carry out certain fiscal year 2016 project (sec. 2611)**

The committee recommends a provision that would modify the authorization contained in section 2603 of the Military Construction Authorization Act for Fiscal Year 2016 (division B of Public Law 114–92) for construction of a Reserve Training Center Complex at Dam Neck, Virginia, to authorize the construction at Joint Expeditionary Base Little Creek-Story, Virginia.

**Modification of authority to carry out certain fiscal year 2018 project (sec. 2612)**

The committee recommends a provision that would modify the authorization in section 2601 of the Military Construction Authorization Act for Fiscal Year 2018 (division B of Public Law 115–91) for additions and alterations to the National Guard Readiness Center at Fort Belvoir, Virginia, to include the construction of a new readiness center. Additionally, if a new readiness center is constructed, this provision would limit the amount available for its construction to the previously authorized \$15.0 million.

**Additional authority to carry out certain fiscal year 2019 project (sec. 2613)**

The committee recommends a provision that would authorize the Secretary of the Navy to carry out a certain military construction project and acquire approximately 8.5 acres of land in Pittsburgh, Pennsylvania using unobligated Navy military construction reserve funds. The provision would also require the Secretary of the Navy to provide the relevant information in accordance with section 2851(c) of title 10, United States Code, regarding the project and notify the congressional defense committees if it becomes necessary to exceed the estimated project cost, in accordance with section 2853 of title 10, United States Code.

## **TITLE XXVII—BASE REALIGNMENT AND CLOSURE ACTIVITIES**

### **Summary and explanation of tables**

The budget request included \$267.5 million for the ongoing cost of environmental remediation and other activities necessary to continue implementation of the 1988, 1991, 1993, 1995, and 2005 Base Realignment and Closure rounds. The committee recommends \$267.5 million for these efforts. The detailed funding recommendations are contained in the state list table included in this report.

### **Authorization of appropriations for base realignment and closure activities funded through Department of Defense Base Closure Account (sec. 2701)**

The committee recommends a provision that would authorize appropriations for fiscal year 2019 for ongoing activities that are required to implement the decisions of the 1988, 1991, 1993, 1995, and 2005 Base Realignment and Closure rounds.

### **Prohibition on conducting additional base realignment and closure (BRAC) round (sec. 2702)**

The committee recommends a provision that prohibits the Department of Defense from conducting another base realignment and closure (BRAC) round. The committee notes that although the Department of Defense did not request authorization to conduct a BRAC round in the request for fiscal year 2019, the Department is focusing its efforts this year on studying facility optimization. The committee is encouraged by these efforts and looks forward to reviewing these results prior to the request for any future BRAC round.

### **Items of Special Interest**

#### **Aligning base realignment and closure goals with infrastructure**

The committee recognizes that in 2005 the Department of Defense implemented a plan for Base Realignment and Closure (BRAC). The Secretary of Defense identified three goals for the 2005 Base Realignment and Closure: (1) Transform the military; (2) Foster jointness; and (3) Reduce excess infrastructure to produce cost savings. The committee recognizes the efforts of the Department since that time and the efforts of communities across the United States in the relocation of military service members and units. The committee believes that the Department of Defense must keep the promises that it made during the 2005 Base Realignment and Closure in regards to its current property, facilities,

and training spaces, as our military and associated communities are growing and modernizing based on these 2005 metrics.

The condition of our bases and surrounding communities, along with the welfare of our personnel and serviceability of our equipment, remains a key component to the readiness of our military. The Department must also continue improving existing infrastructure and pursuing military construction projects that effectively meet the demands of our future force, as opposed to asking this committee for a future complete overhaul of its posture at home. The committee finally notes that this Act prohibits the Department of Defense from conducting an additional BRAC round.

## **TITLE XXVIII—MILITARY CONSTRUCTION AND GENERAL PROVISIONS**

### **Subtitle A—Military Construction Program and Military Family Housing Changes**

#### **Additional authority to obtain architectural and engineering services and construction design for defense laboratory modernization pilot program (sec. 2801)**

The committee recommends a provision that would amend section 2803 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) to extend the pilot program for the use of Research, Development, Test, and Evaluation (RDT&E) funds for military construction projects until 2025 and clarify that RDT&E funds may be used to obtain architectural and engineering services and carry out construction design.

#### **Modification of contract authority for acquisition, construction, or furnishing of test facilities and equipment (sec. 2802)**

The committee recommends a provision that would amend section 2353(a) of title 10, United States Code, to clarify the authority for the contract of a military department to provide for the acquisition or construction of facilities and equipment, by either the government or the contractor, that the secretary of the military department concerned determines to be necessary for the performance of a contract for research, development, or both.

The committee believes that the current Air Force Instruction (AFI) approval process for acquisition or construction projects seeking to use the authority in section 2353 of title 10, United States Code, does not adequately address construction funded through contracts for research, development, or both. The addition of language to AFIs pertinent to acquisition and construction of facilities and equipment authorized by section 2353 of title 10, United States Code, is necessary for a more effective and seamless implementation of this authority.

Accordingly, the committee directs the Secretary of the Air Force to issue a revised AFI that better supports the use of section 2353 of title 10, United States Code, and to brief the committee not later than September 30, 2018, on the results of a review of the authorities that support the acquisition or construction of facilities and equipment for research and development contracts, the supporting AFIs to carry out such projects, and any plans to update the AFI to better utilize the existing authorities of Research and Development Contracts.

**Extension of temporary, limited authority to use operation and maintenance funds for construction projects in certain areas outside the United States (sec. 2803)**

The committee recommends a provision that would extend subsection (h) of section 2808 of the Military Construction Authorization Act for Fiscal Year 2004 from 2019 to 2020 and limit the funding authority to \$50,000,000.

**Unspecified minor military construction projects related to revitalization and recapitalization of Defense Industrial Base Facilities (sec. 2804)**

The committee recommends a provision that would amend section 2805 of title 10, United States Code, to establish a pilot program authority until 2023 for unspecified minor military construction projects of \$6.0 million in support of defense industrial base facilities.

The committee recognizes the need to modernize defense industrial base facilities in order to support the modernization of individual weapons systems. The flexibility afforded by the use of funds in unspecified minor construction projects would allow installation commanders to quickly adapt to changing needs and requirements, especially as depots and other facilities historically face difficulty in competition for military construction funds.

**Congressional oversight of projects carried out pursuant to laws other than Military Construction Authorization Acts (sec. 2805)**

The committee recommends a provision that would amend section 2802(e)(1) of title 10, United States Code, to include all congressional defense committees in any notification requirements set forth by any law other than a Military Construction Authorization Act.

**Subtitle B—Project Management and Oversight Reforms**

**Updates and modifications to Department of Defense Form 1391, Unified Facilities Criteria, and military installation master plans (sec. 2811)**

The committee recommends a provision that would require the Department of Defense (DOD) Form 1391 to include a disclosure of whether or not a proposed project falls within or partially within a 100-year floodplain and, if so, a specific risk mitigation plan. The provision would also require a process for risk analysis and a report on planned mitigation measures for buildings, require disclosure as to whether a project was included in the prior year's future years defense program, require an energy study or life cycle analysis, amend the Unified Facilities Criteria to ensure building risk data are incorporated into planned designs and modifications, require consideration of energy and climate resiliency efforts in major military installation master plans, amend the definition of military installation resilience, and include threats to military installation resilience for adjustment and diversification assistance.

**Work in Process Curve charts and outlay tables for military construction projects (sec. 2812)**

The committee recommends a provision that would require the Secretary of Defense and the service secretaries to include as an addendum to the 1391 forms submitted with the budget request for each fiscal year a Work in Process Curve chart and monthly outlay table for funding, obligations, and outlay figures for any military construction project over \$35,000,000.

**Subtitle C—Land Conveyances**

**Land exchange, Air Force Plant 44, Tucson, Arizona (sec. 2821)**

The committee recommends a provision that would grant the Secretary of the Air Force permissive authority to convey 58 acres on Air Force Plant 44, Arizona to Tucson International Airport and the ability to construct new explosives storage facilities to replace the existing facility that would be conveyed with this provision while ensuring that the new explosives storage facilities is within the end-of-runway clear zone.

**Land conveyance, Eglin Air Force Base, Florida (sec. 2822)**

The committee recommends a provision that would grant the Secretary of the Air Force permissive authority to convey 80 acres of land adjacent to Eglin Air Force Base to the Air Force Enlisted Village. The committee notes that, should the Secretary invoke this authority, the conveyance would include a reversionary interest clause.

**Subtitle D—Other Matters**

**Commemoration of Freedman's Village (sec. 2831)**

The committee recommends a provision that would allow an easement of approximately 0.1 acre of land outside Arlington National Cemetery for the purpose of recognizing Freedman's Village.

**Strategic plan to improve capability of Department of Defense training ranges and installations (sec. 2832)**

The committee recommends a provision that would require the Secretary of Defense, working through the Under Secretary of Defense for Acquisition and Sustainment, to develop a comprehensive strategic plan for using existing authorities to address training constraints to improve operations training capabilities requiring training enablers available in and outside the United States. The committee notes that this would be an annual report with a sunset of 2022 and would replace the existing Sustainable Range Report, which is set to expire in 2018.

**Native American Indian lands environmental mitigation program (sec. 2833)**

The committee recommends a provision that would amend section 160 of title 10, United States Code, to authorize the Secretary of Defense to participate in a program to mitigate the environ-

mental effects of defense activities on Indian lands and culturally connected locations.

**Defense community infrastructure pilot program (sec. 2834)**

The committee recommends a provision that would amend section 2391 of title 10, United States Code, by granting the Secretary of Defense permissive authority to make grants, conclude cooperative agreements, and supplement funds to assist State and local governments in addressing deficiencies in community infrastructure. The provision would require that the State or local government contribute not less than 30 percent of the funding for the community infrastructure project. The authority set forth in this provision would expire on September 30, 2023.

**Representation of installation interests in negotiations and proceedings with carriers and other public utilities (sec. 2835)**

The committee recommends a provision that would amend section 501(c) of title 40, United States Code, by requiring that any representative of the General Services Administration that will represent a military installation in any negotiation must first notify the senior mission commander of the installation and solicit and represent the interest of the installation as determined by the installation's senior mission commander.

**White Sands Missile Range land enhancements (sec. 2836)**

The committee recommends a provision that would establish White Sands National Park and abolish White Sands National Monument. The establishment of a national park would increase the public recognition of the significant resources of White Sands. This provision would modify the boundary of White Sands National Park and convey 3,737 acres of land from the Secretary of the Interior to the Secretary of the Army. This provision would also convey 8,592 acres of land from the Secretary of the Army to the Secretary of the Interior.

**Authority to transfer funds for construction of Indian River Bridge (sec. 2837)**

The committee recommends a provision that would grant the Secretary of Defense permissive authority to transfer up to 50 percent of the shared costs for the construction of the Indian River Bridge to the Administrator of the National Aeronautics and Space Administration.

**Items of Special Interest**

**Assessment of military structures in permafrost areas**

The committee remains concerned that climate-related events are already being observed at Department of Defense (DOD) installations and that the effects of which will continue to have an impact on both the security environment in which military forces operate and on DOD infrastructure worldwide. For instance, the committee notes that melting permafrost in Alaska had led to costly and unexpected repairs of facilities. Additionally, the committee is con-

cerned that a failure to address identified deficiencies can over time put DOD military readiness, mission capability, military construction, and valuable taxpayer resources at risk.

Accordingly, the committee directs the Assistant Secretary of Defense for Energy, Installations, and Environment to submit to the congressional defense committees a report with an assessment of military structures in permafrost area no later than 180 days after the enactment of this Act. The assessment shall include: (1) An inventory of all military structures currently built in permafrost areas, including Alaska, Greenland, and northern European countries to include all planned new military construction in permafrost areas for the next 4 fiscal years; (2) An inventory of which structures at Eielson Air Force Base, if any, are experiencing stresses and impacts associated with melting permafrost foundation degradation to include proposed repairs or new construction; (3) An explanation of how the DOD determines what constitutes a permafrost area; (4) A description of the process by which the DOD determines whether a deep foundation is necessary in a permafrost area, including cost factors; (5) An assessment of how design and construction standards account for foundation integrity in the event of permafrost degradation; (6) A description of the cost difference between building on standard foundations and deep foundations associated with permafrost degradation to include repairs over the life of the project for both; and (7) Any other information or recommendations the Assistant Secretary of Defense determines appropriate.

#### **Encouraging the use of existing authorities for construction of future National Guard Readiness Center**

The committee recognizes that the South Carolina National Guard plans to construct the Summerville National Guard Readiness Center in fiscal year 2021 and commends the South Carolina National Guard for working to acquire Federal land with Joint Base Charleston in submission of a Base Action Request for approval. The committee encourages the Secretary of the Air Force to leverage existing authorities to make land available at Joint Base Charleston, South Carolina to the Secretary of the Army for the purpose of constructing a permanent National Guard Readiness Center. Further, the committee encourages the Secretary of the Army to use his authority to issue a revocable license to the South Carolina National Guard for the purpose of constructing a permanent National Guard Readiness Center on the land made available if the Secretary determines the license to be in the interest of the Army.

#### **Excess capacity estimates**

The committee notes that a report by the Comptroller General of the United States titled “Defense Infrastructure: DOD Needs to Improve the Accuracy of its Excess Capacity Estimates” (GAO-18-230) found that the Department of Defense’s (DOD) 2017 excess capacity analysis “does not have the accuracy and analytical sufficiency to provide Congress with a reasonable estimate of the actual excess capacity within DOD.” Additionally, the Comptroller General found that the DOD “used a baseline for the analysis that did

not fully take into account changes in infrastructure needs since 1989, assumptions in its analysis that are not reasonable, and methods that were not sufficient or implemented consistently.”

The committee recognizes that DOD has been unable to conduct a full Base Realignment and Closure (BRAC) analysis; however, the committee is concerned that without initial excess capacity estimates that are accurate and sufficient, the Department may not be providing the Congress with the information necessary to make a fully informed decision on a future BRAC round.

Accordingly, the committee directs the Assistant Secretary of Defense for Energy, Installations, and Environment to reliably update the baseline used for estimating excess infrastructure capacity, using assumptions in estimating excess capacity that are considered realistic and credible, and develop guidance to improve the methods used in the analysis in order to ensure consistent implementation of DOD’s methodology to produce reliable estimates of excess capacity across the DOD. Additionally, the guidance shall, at a minimum, clearly define major installations, identify if and when it is appropriate to include a facility in more than one category to take into account multiple missions at the facilities, and provide protocols for assessing excess capacity at joint bases. The Assistant Secretary shall brief or report on this guidance to the committee not later than February 1, 2019.

#### **Federal land transfer for South Carolina National Guard**

The committee recognizes that the South Carolina National Guard intends to establish a Federal training site and commends the South Carolina National Guard for working with the Savannah River Site, Aiken, South Carolina on a potential location for the site. The committee encourages the Secretary of Defense, in consultation with the Secretary of Energy, to use existing authorities to make land available at the Savannah River Site, Aiken, South Carolina to the Secretary of the Army for the purpose of establishing a Federal training site for the South Carolina National Guard. Further, the committee encourages the Secretary of the Army to use his authority to issue a revocable license to the South Carolina National Guard for the purpose of establishing a Federal training site on the land made available if the Secretary determines the license to be in the interest of the Army.

#### **Incremental funding of military construction projects**

The committee remains very concerned that the Department of Defense is unable to plan, program, or request incrementally funded military construction projects. The committee strongly believes that the Department should seek relief from this restrictive policy set forth by the Office of Management and Budget. The committee notes that incremental funding authority would ensure greater stability and predictability in the planning process, reduce acquisition costs, and enable the Department to execute more work in place on other infrastructure requirements in the fiscal year. Furthermore, the committee believes that incremental funding of large and complex military construction projects ensures continuous oversight and opportunities to adjust the authorization of appropriation level

for projects, should issues arise or requirements change over the course of construction.

To date, the committee is not aware of any example where a military construction project has been left with inadequate funding or has not been executable as a result of an incremental funding approach. The committee strongly encourages and expects the Secretary of Defense, in coordination with the Director of the Office of Management and Budget, to work with the committee, and the other appropriate congressional defense committees, to develop a framework that enables the planning, programming, budgeting, and execution of incrementally funded military construction projects.

As reflected in the funding tables, the committee continues to believe in the military value and effective use of taxpayer funding to incrementally authorize appropriations for certain military construction projects. The committee notes that, as readiness is the Department's number one priority, utilizing incremental funding, the committee was able to authorize dozens of additional projects including National Guard readiness centers, fire stations, barracks, and training ranges. As such, the authorized funding shall be immediately available and allotted to contract for the full scope of authorized military construction projects. The committee finally notes that executing additional infrastructure projects at a faster pace, while maintaining said oversight, only improves readiness.

#### **Installation and facilities physical security gaps**

The committee notes that the physical safety and security of Department of Defense personnel and infrastructure are paramount to readiness. The committee is concerned, however, that there are places where major Department activities are not located behind a fence line or other physical access barriers. The committee notes that such locations are essentially open to the public, putting high visibility concentrations of military personnel at risk. The committee recognizes that the Department must prioritize where to invest a limited pool of resources when it comes to infrastructure and resources. The committee encourages the Department to seek out innovative ways to improve physical security. However, the committee must first have a better understanding of how many installations or facilities exist without appropriate physical access barriers.

Accordingly, the committee directs the Assistant Secretary of Defense for Energy, Installations, and Environment to provide a briefing no later than September 30, 2018, identifying all installations and locations that host more than 25 civilian employees or uniformed personnel and that lack appropriate physical access barriers. The briefing shall list each location in priority order and include a cost estimate to provide the necessary security measures at each location identified.

#### **National Maritime Intelligence Center Parking**

The committee notes that the National Maritime Intelligence Center (NMIC) is located on the Suitland Federal Center in Suitland, Maryland. The Office of Naval Intelligence is the host command of the NMIC, and the facility is required to provide safe

and adequate parking for all tenet commands, which include 3,700 employees. Since 2008, parking at the NMIC has been inadequate due to significant facility expansion for roughly 700 new employees and the discovery of structural and safety deficiencies of the NMIC parking garage. The committee notes that Navy engineers have assessed that the useful life of the garage will expire between 2021 and 2023. Accordingly, the committee directs the Secretary of Defense to provide a planned strategy to correct these deficiencies to the committee no later than March 1, 2019.

#### **Process for prioritizing funding and identifying facilities for demolition**

The committee remains concerned about the quality and condition of many Department of Defense (DOD) facilities around the globe, despite the Department's receiving significant increases in funding for facilities sustainment restoration and modernization (FSRM) in recent years to tackle the challenge of maintaining facilities and addressing infrastructure maintenance backlogs. As such, the committee strongly encourages the Department to increase investments in its FSRM accounts in order to match its rhetoric and accepted level of risk to date. Additionally, the committee strongly urges the DOD to ensure that its installation master plans include a comprehensive restoration and modernization project plan that uses existing conversion authorities to the maximum extent practicable and identifies installation deficiencies detrimental to the mission.

The committee is also aware that the DOD has sought FSRM funding for the demolition of facilities that no longer meet operational requirements and, in some cases, hinder readiness across its installations. The committee has received testimony in previous years about the cumulative negative impacts of poorly maintained facilities on the overall readiness of the Department.

The committee is concerned that only a small amount of its FSRM is programmed for the demolition of aged and no longer usable facilities. Demolition of these facilities is important to sustaining readiness for the warfighter and reducing potential health and safety risks at DOD installations. However, the committee is concerned about how the DOD will prioritize funding and identify buildings and facilities for demolition. As such, the committee directs the Assistant Secretary of Defense for Energy, Installations, and Environment to report to the congressional defense committees no later than March 1, 2019, on the Department's process to: (1) Identify buildings and facilities for demolition; (2) Prioritize demolitions across the DOD enterprise; and (3) Provide a list, by military service, to include the Reserve and Guard components, of buildings and facilities (by installation) that will be demolished with fiscal year 2019 funding and could be demolished across the future years defense program if additional resources were to become available.

#### **Review of Army Corps of Engineers Centers of Standardization**

The committee notes that the Army Corps of Engineers has established nine Centers of Standardization for military construction

projects, whose purpose is to achieve savings and benefits in the programming, design, and construction of Army facilities. The committee understands that the intent of these Centers is to improve facilities design quality, reduce design and construction costs and time, and reduce change orders during construction, among other things.

However, the committee notes that a Government Accountability Office report, published March 27, 2018, titled “Defense Infrastructure: Action Needed to Increase the Reliability of Construction Cost Estimates” (GAO-18-101), found that Department of Defense guidance for construction projects does not fully incorporate the necessary steps for developing reliable cost estimates. Additionally, projects consistently face cost overruns and schedule delays. The committee is encouraged by the efforts by the Corps of Engineers to ensure that facilities are constructed at the lowest cost while still trying to ensure mission capability for users. However, the committee is concerned that trends indicate that the Centers are not achieving their stated goal.

Accordingly, the committee directs the Comptroller General of the United States to submit to the congressional defense committees a report on the effectiveness of the Centers of Standardization no later than April 1, 2019. The report should address at a minimum the following information: (1) To what extent the Army Corps of Engineers Centers of Standardization achieve their stated objectives; (2) The metrics that the Corps of Engineers uses to measure achievements thought to be derived from the Centers; (3) To what extent their measurement techniques comport with best practices for such measurement; (4) What potential liability the Centers incur in the event that problems develop during construction; (5) To what extent the Departments of the Navy and Air Force have comparable Centers or other procedures for achieving standardization and, if they do, how effectively the lessons learned are shared; and (6) Any additional information that the Comptroller General deems relevant.

#### **Standoff weapons facility project at Andersen Air Force Base**

The committee notes that Andersen Air Force Base enables a heavy bomber presence in the Pacific Area of Operations. An integral aspect of this operation is the ability to load munitions rapidly onto bombers using the large rotary launchers associated with these aircraft. The committee is supportive of efforts to develop a standoff weapons facility at Andersen Air Force Base that will contain the necessary high bays and heavy loading equipment to facilitate the storage and loading of these rotary launchers and to facilitate timely load out of munitions into bombers.



## **TITLE XXIX—OVERSEAS CONTINGENCY OPERATIONS MILITARY CONSTRUCTION**

### **Summary**

The budget request included \$921.4 million for military construction in fiscal year 2019 for overseas contingency operations.

The committee recommends \$852.4 million for military construction in fiscal year 2019 for overseas contingency operations.

### **Authorized Army construction and land acquisition projects (sec. 2901)**

The committee recommends a provision that would authorize Army military construction project for fiscal year 2019 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

### **Authorized Navy construction and land acquisition projects (sec. 2902)**

The committee recommends a provision that would authorize Navy military construction projects for fiscal year 2019 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

### **Authorized Air Force construction and land acquisition projects (sec. 2903)**

The committee recommends a provision that would authorize Air Force military construction projects for fiscal year 2019 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

### **Authorized Defense Agencies construction and land acquisition projects (sec. 2904)**

The committee recommends a provision that would authorize Defense Agencies military construction projects for fiscal year 2019 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

### **Authorization of appropriations (sec. 2905)**

The committee recommends a provision that would authorize appropriations for military construction in the overseas contingency operations account for fiscal year 2019.



**DIVISION C—DEPARTMENT OF ENERGY NATIONAL SECURITY AUTHORIZATIONS AND OTHER AUTHORIZATIONS**

**TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS**

**Subtitle A—National Security Programs Authorizations**

**National Nuclear Security Administration (sec. 3101)**

The committee recommends a provision that would authorize the appropriation of funds for the activities of the Department of Energy's National Nuclear Security Administration.

**Defense environmental cleanup (sec. 3102)**

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's defense environmental clean-up activities.

**Other defense activities (sec. 3103)**

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's other defense activities.

**Nuclear energy (sec. 3104)**

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's nuclear energy activities.

**Subtitle B—Program Authorizations, Restrictions, and Limitations**

**Clarification of roles and authorities of National Nuclear Security Administration (sec. 3111)**

The committee recommends a provision that would clarify the roles and authorities of the National Nuclear Security Administration.

The committee has been outspoken in its concern about diversion between the National Nuclear Security Administration's (NNSA) defense programs and the requirements of the Department of Defense (DOD). Through life extension and major alterations programs, production capacity, and research into future weapons technology, the NNSA executes its highest responsibility, the maintenance of the nuclear deterrent. The committee therefore sees the linkage between NNSA and DOD as being enormously important and is committed to the preservation of the provider-customer relationship.

The appropriate balance in the relationship of the NNSA with the broader Department of Energy (DOE) is critical in this respect. The NNSA was established in the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65) as a semi-autonomous organization within the DOE. The Congress recognized that the nuclear production and maintenance mission required some cabinet-level representation and saw benefits in its cohabitation with the atomic energy and national laboratories infrastructure in the DOE. However, it was wary of the influence of the DOE's competing interests on the weapons programs, which are intended to meet the requirements of the DOD.

The committee believes that these fears have been realized to an extent. Though the NNSA has so far provided the nuclear weapons that the DOD needs for the nuclear deterrent, delays and cost overruns in the NNSA's weapons programs and recent disagreements about major programs associated with weapons activities evince the tensions inherent in the current organizational structure. The committee is not alone in this opinion. The November 2014 Augustine-Mies Panel found "that the relationships among NNSA, the Secretary of Energy, and the DOE headquarters are not properly aligned with mission needs today, and are in need of major reform" and that flawed DOE organizational and process features have damaged the NNSA's ability to carry out its mission. The January 2007 Government Accountability Office (GAO) report, "National Nuclear Security Administration: Additional Actions Needed to Improve Management of the Nation's Nuclear Programs" (GAO 07-26), corroborated the panel's findings: "[A]lthough some NNSA programs have set up procedures for interacting with DOE, other programs have not, resulting in organizational conflict" (page 34). In 2009, the bipartisan Congressional Commission on the Strategic Posture of the United States found that "the governance structure of the NNSA is not delivering the needed results. This governance structure should be changed." The commission concluded that "it is time to consider fundamental changes."

The committee is frustrated that so many reports, studies, and panels have come to the same conclusions for more than 15 years, yet no structural change has been implemented. The statement of managers accompanying the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112-239), out of which the Augustine-Mies panel was authorized, expressed nearly identical concerns: ". . . the status quo is not working and must not be continued. The weaknesses of the current system, including an overly bureaucratic system, weak accountability, ineffective oversight, insufficient program and budget expertise, and poor contract management have been repeatedly demonstrated . . ." The conferees asserted that "[f]urther slippage in project schedules is unacceptable, and could undermine the credibility of the nation's nuclear deterrent." The conferees concluded with the hope that the creation of the advisory panel that would become Augustine-Mies would "provide a bipartisan solution to fix this system." The committee notes that project schedules have continued to slip in the 5 years since the writing of that statement, among other continued challenges, and few of the recommendations of the panel have been adopted.

Therefore, in order to realign the immediate responsibilities of the National Nuclear Security Administration and reinforce its autonomy within the Department of Energy, the committee recommends a provision that would amend the Department of Energy Organization Act (Public Law 95–91) as it relates to the NNSA, the National Nuclear Security Administration Act (Public Law 106–65), and the Atomic Energy Defense Act (Public Law 107–314) to empower the NNSA within the DOE. The provision would make the Administrator of the NNSA responsible for a number of duties currently assigned to the Secretary of Energy, clarify the lines of authority at the DOE to emphasize the role of Administrator, and expand the remit and authority of the Administrator in statute. The provision would implement a number of recommendations of the Augustine-Mies panel and other studies, including those regarding the formulation of NNSA-specific procedure and regulation wherever possible. The provision would not remove the Administrator from the Secretary of Energy's lines of authority nor divorce the defense mission from the DOE's functions, nor would it divorce health and safety standards at NNSA facilities from DOE regulations. Finally, the provision would repeal the statutory cap on federal employees, in order to allow the NNSA to hire at sufficient levels to carry out its mission.

The committee does not intend for this provision to be interpreted as an indictment of the current Secretary of Energy or Administrator of the NNSA, who have performed admirably. Rather, the committee seeks to address a number of structural impediments independent of its particular operators, and, in doing so, create resilient and enduring organizations to enable the Secretary of Energy and the Administrator of the NNSA to carry out the Department of Energy's defense mission.

#### **National Nuclear Security Administration Personnel System (sec. 3112)**

The committee recommends a provision that would make permanent the personnel demonstration project carried out by the National Nuclear Security Administration since 2008.

#### **Amendments to the Atomic Energy Act of 1954 (sec. 3113)**

The committee recommends a provision that would permit the delegation of review under section 57b of the Atomic Energy Act of 1954 (Public Law 83–703), as amended (42 U.S.C. 2077(b)(2)) on a case-by-case basis as consistent with the national security interests of the United States. The provision would also require that, during a review under section 57b of title 42, United States Code, if such a request is denied, the Department of Energy be told the reasons for denial during interagency review or, if the review period is extended, the reason for this extension, to be reported to the congressional defense committees on an annual basis. Finally, the provision recommends the Department of Energy establish rules for civil fines for a violation of section 57b of title 42, United States Code.

**Extension of enhanced procurement authority to manage supply chain risk (sec. 3114)**

The committee recommends a provision that would extend for 6 years, the authority for the Secretary of Energy to take certain actions with regard to the protection of the supply chain of the Department of Energy.

The committee notes that the National Nuclear Security Administration (NNSA) has used this authority in an appropriately limited fashion since it was granted in 2014. The committee believes it is important for the NNSA to have the same tools to protect its supply chain as the Department of Defense and the intelligence community. The committee also notes that the Comptroller General of the United States is currently assessing NNSA's use of this authority as mandated by section 3113(e) of the National Defense Authorization Act for Fiscal Year 2014 (Public Law 113-66). The committee looks forward to the results of this assessment.

**Pilot program on conduct by Department of Energy of background reviews for access by certain individuals to national security laboratories (sec. 3115)**

The committee recommends a provision that would establish a pilot program for 2 years at the Department of Energy (DOE) to independently conduct background reviews prior to admitting citizens of nations on the current sensitive countries list to national security laboratories. The provision would require the Federal Bureau of Investigation (FBI) and the Director of National Intelligence to continue to conduct background reviews under section 4502(a) of the Atomic Energy Defense Act (50 U.S.C. 2652(a)) for the duration of the pilot program.

The committee understands that, under current law, the conduct of these reviews by the FBI often takes longer than the 15 days required by statute and requires duplication of effort between the FBI and the DOE. While the committee has confidence that the DOE's counterintelligence capability has improved in the 2 decades since the current statute was enacted, the committee is concerned that the DOE may not currently have the capacity to take on this additional workload. The committee hopes that, at the end of this pilot program, the DOE will be able to demonstrate that it is capable of conducting the same reviews with no adverse counterintelligence outcomes and that the committee will be able to recommend a permanent transfer of this responsibility from the FBI to the DOE.

**Extension of authority for acceptance of contributions for acceleration of removal or security of fissile materials, radiological materials, and related equipment at vulnerable sites worldwide (sec. 3116)**

The committee recommends a provision that would amend section 3132(f)(7) of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108-375) to extend the Secretary of Energy's authority to accept, retain, and use contributions for the accelerated removal of and security for fissile materials, radiological materials, and related equipment at vulnerable sites worldwide through 2023.

**Modification of limitation on development of low-yield nuclear weapons (sec. 3117)**

The committee recommends a provision that would make several findings regarding the changes in the international security environment related to nuclear forces over the last decade. The provision would also modify section 3116(c) of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136) to remove the requirement for specific authorization by the Congress prior to commencement of engineering development, or any subsequent phase, of a low-yield nuclear weapon. Instead, the provision would require that the Secretary of Energy specifically request funding for such a weapon in the annual budget request before commencing engineering development, in accordance with section 4209(a) of the Atomic Energy Defense Act (50 U.S.C. 2529(a)), which requires the Secretary to specifically request funds in the annual budget request for any activity related to the development of a new or modified nuclear weapon.

**Prohibition on use of funds for terminating activities at MOX facility (sec. 3118)**

The committee recommends a provision that would prohibit the Department of Energy from obligating or expending any funds for fiscal year 2019 or prior fiscal years to terminate construction and project support activities at the Mixed Oxide Fuel Fabrication Facility or to convert such facility to be used for any purpose other than its original mission.

**Subtitle C—Plans and Reports**

**Modifications to cost-benefit analyses for competition of management and operating contracts (sec. 3121)**

The committee recommends a provision that would modify the requirement for the Administrator of the National Nuclear Security Administration (NNSA) to provide a report to the congressional defense committees containing a cost-benefit analysis of competition of management and operating contracts for NNSA laboratories and production plants following each award of such a contract such that the report would be due 30 days after the transition to a new contract is complete.

Section 3121 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112–239) required the NNSA to provide this report. The committee notes that this section was amended to direct the Comptroller General of the United States to conduct comprehensive reviews of these reports after the award of the Consolidated Nuclear Security contract in January 2013. The committee remains interested in whether the consolidation of the contracts for the Pantex Plant and the Y–12 National Security Complex has resulted in the cost savings expected at contract award.

Therefore, the committee directs the Comptroller General to provide a comprehensive briefing, as defined in subsection (d)(2) of section 3121 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112–239), as amended, of the contract awarded to Consolidated Nuclear Security in January of 2013.

**Review of defense environmental cleanup activities (sec. 3122)**

The committee recommends a provision that would require the Secretary of Energy to coordinate with the National Academies of Sciences, Engineering, and Medicine on a review of the cleanup activities in the Office of Environmental Management.

**Survey of workforce of national security laboratories and nuclear weapons production facilities (sec. 3123)**

The committee recommends a provision that would require the Administrator of the National Nuclear Security Administration (NNSA) to submit to the congressional defense committees a proposal to conduct a survey of the employees of the NNSA laboratories and production plants.

The committee notes that several of the studies and commissions on the management of the NNSA over the last decade have recommended the collection and analysis of more data in order to monitor trends and document improvement where it exists. The committee believes that, because contract employees make up such a large percentage of the NNSA workforce, the NNSA should undertake a systematic survey program, similar to the Federal Employee Viewpoint Survey, for staff at the labs and plants.

**Elimination of certain reports (sec. 3124)**

The committee recommends a provision that would eliminate certain reporting requirements for the Department of Energy's Environmental Management Office.

**Implementation of Nuclear Posture Review by National Nuclear Security Administration (sec. 3125)**

The committee recommends a provision that would require the Administrator of the National Nuclear Security Administration (NNSA) to submit to the congressional defense committees a report on the implementation of the 2018 Nuclear Posture Review (NPR) by the NNSA. The report would identify specific actions associated with the NPR, including the office of primary responsibility for each action and key milestones associated with it. The report would be required to be submitted no later than December 1, 2018.

**Budget Items**

**W76-2**

The budget request for the National Nuclear Security Administration (NNSA) included \$4.7 billion for directed stockpile work, of which \$113.9 million was for the W76-1 life extension program.

The committee understands that at the time of the compilation of the budget request, the Department of Defense had not yet finalized the Nuclear Posture Review, and as such the recommendations of that review were not included in the NNSA's budget request. The committee understands that the NNSA's preferred method for fielding the low-yield submarine-launched ballistic missile recommended by the Nuclear Posture Review is a modification of a small number of W76-1 warheads currently undergoing life extension. The amendment to the fiscal year 2019 budget request sub-

mitted to the Congress on April 13, 2018, requests a transfer of \$65 million from the W76–1 life extension program to the W76–2 warhead modification program.

Therefore, the committee recommends a decrease of \$65.0 million to the W76–1 life extension program line, for a total of \$48.9 million, and an equivalent increase to the new W76–2 warhead modification line.

### **Defense nuclear waste disposal**

The budget request for the Department of Energy included \$120.0 million for the Yucca Mountain and Interim Storage programs, of which \$30.0 million was from the Defense Nuclear Waste Disposal Fund. The committee recommends a decrease of \$30.0 million to the Defense Nuclear Waste Disposal Fund.

### **Items of Special Interest**

#### **Comptroller General review of domestic uranium industrial base**

The National Nuclear Security Administration (NNSA) requires enriched uranium for several military purposes. To produce enriched uranium, the material is processed through a number of stages to concentrate and refine it. The NNSA has consistently asserted that international agreements to which the United States is a party prohibit the use of enriched uranium for military purposes if the uranium or its enrichment carry obligations for “peaceful use” under these agreements. The committee is unconvinced that the NNSA has thoroughly explored the possible interpretations of the relevant international agreements to take advantage of existing uranium processing capability in the United States.

Accordingly, however, the NNSA intends to rely on the small domestic commercial uranium industry to provide uranium, technology, and facilities to produce unobligated enriched uranium that can be used for military purposes. The last operating enrichment facility that produced unobligated enriched uranium closed in 2013. The NNSA is in the process of evaluating new enrichment options, which is expected to produce a plan to construct a new domestic uranium enrichment facility beginning at the end of the next decade.

Beyond enrichment, the committee is concerned that other stages of the nuclear fuel cycle, including mining, milling, and conversion, are at risk in the United States due to market conditions. The committee is also concerned that the NNSA is not appropriately planning mitigation strategies to ensure that these capabilities will be available to support a future domestic uranium enrichment plant.

Accordingly, the committee directs the Comptroller General of the United States to conduct a comprehensive review of the NNSA’s planning and assumptions for the future unobligated uranium industrial base. The review should include: (1) The extent to which the NNSA has conducted studies evaluating the uranium industrial base critical to the U.S. nuclear fuel cycle and the conclusions of these studies; (2) The extent to which the NNSA has explored possible changes to the interpretation of the international agreements that lead to the “peaceful use” restrictions on uranium;

(3) The extent to which the NNSA has developed plans for obtaining unobligated uranium services if any element of the domestic uranium process is disrupted; and (4) The extent to which the NNSA is incorporating this information into its ongoing analysis of alternatives for reestablishing a domestic uranium enrichment capability, including in terms of reference, selection of alternatives for analysis, or guiding documents for the analysis.

The Comptroller General shall provide a preliminary briefing to the congressional defense committees no later than March 31, 2019, with a report to follow at a date to be agreed upon at the time of the briefing.

#### **Comptroller General review of Mixed Oxide Fuel Fabrication Facility**

The committee notes that the Department of Energy exercised the waiver authority outlined in section 3121(b) of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) to halt construction of the Mixed Oxide (MOX) Fuel Fabrication Facility. The committee further notes that this certification was received by the Congress 1 day after the House Armed Service Committee completed its mark-up and less than 2 weeks before committee mark-up in the Senate for the fiscal year 2019 National Defense Authorization Act. This has made it extremely difficult for the committees to determine the correct funding level for the program in the fiscal year 2019 National Defense Authorization Act, as the committee does not know if the certification followed the requirements for cost evaluation as called for in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

Therefore, the committee directs the Comptroller General of the United States to review the cost analyses conducted by the Secretary of Energy to support the exercise of the waiver relating to construction and project support activities at the MOX facility and the dilute and dispose alternative. This review shall determine, at a minimum, if the cost analyses followed best practices as required by section 3121(b) and shall also evaluate whether the cost analyses for the life-cycle cost estimates for both the MOX facility and the dilute and dispose alternative are comparable, credible, accurate, and meet appropriate costing standards for Government Accountability Office.

A written report on the findings shall be submitted to the congressional defense committees no later than August 31, 2018, with a briefing to follow.

#### **Comptroller General review of strategic radiation-hardened microelectronics**

The trustworthiness of the supply chain that provides specialized components for U.S. nuclear weapons must be sustained to deal with potential sabotage, malicious introduction of an unwanted function, and subversion of a function without detection. The National Nuclear Security Administration (NNSA) has a single radiation-hardened silicon microelectronics facility, Microsystems and Engineering Sciences Applications at Sandia National Laboratories, which relies on tools and capabilities that are no longer supported by manufacturers. Following a determination of mission need in

2016, the NNSA recently concluded an analysis of alternatives for a trusted microsystem capability to ensure that needs are met in the 2025–2040 timeframe.

The committee is concerned that required critical decisions and planning for budget resources at the NNSA are not being made sufficiently quickly to ensure that the required flexible and responsive operational capability is maintained after 2025.

The committee therefore directs the Administrator of the NNSA to brief the congressional defense committees no later than November 1, 2018, on the status, plans, and estimated budget requirements, including any required facility expansion or new construction, to meet the Nation's program requirements for unique strategic radiation-hardened microsystem capabilities after 2025.

The committee also directs the Comptroller General of the United States to review NNSA's efforts to recapitalize its strategic radiation-hardened microelectronics design and production capacity, addressing the following questions: (1) What is known about the extent of risks to NNSA's supply chain, and what steps are being taken to address these risks in the near-term? (2) To what extent did NNSA's analysis of alternatives and related cost estimates meet best practices for such studies? (3) To what extent is the NNSA managing radiation-hardened microelectronics as a strategic commodity?

The Comptroller General shall provide a briefing to the congressional defense committees no later than March 15, 2019, with a report to follow at a date agreed to at the time of the briefing.

#### **Independent review of Engineering Assessment of plutonium pit production**

In April of 2018, the National Nuclear Security Administration (NNSA) completed an engineering assessment report on plutonium pit production. The report provides the Administrator's recommended alternative for the NNSA's plutonium capabilities. The proposed strategy repurposes the Mixed-Oxide Fuel Fabrication Facility at the Savannah River Site combined with expanded capabilities at Plutonium Facility-4 at Los Alamos National Laboratory.

On May 4, 2018, the Chairman of the Nuclear Weapons Council (NWC) provided the written certification required by section 3141 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91). In making the required certification accepting NNSA's recommendation, the Chairman stated there are "major construction and certification schedule risks inherent in the plan. [The Department of Energy] must address these risks to preclude failure to meet military requirements by 2030." The NWC's certification letter went on to state, "To reduce risk, the recurring and non-recurring cost estimates for the recommended alternative must be refined prior to the next construction major milestone decision point, estimated to be in year 2021."

In light of the specific concerns raised by the Chairman of the NWC, the committee directs the Administrator of the NNSA, no later than July 1, 2018, to enter into an arrangement with a federally-funded research and development center (FFRDC) to conduct an independent review and assessment of the soundness and validity of the estimated construction and life-cycle costs of each of the

alternatives analyzed in NNSA's April 2018 engineering assessment report on plutonium pit production. Not later than October 1, 2018, the report of the FFRDC shall be submitted to the Administrator of the NNSA, and, 10 days after receiving the report of the FFRDC, the Administrator shall submit the report to the congressional defense committees.

#### **Nuclear smuggling detection in Iraq**

The committee directs the Administrator of the National Nuclear Security Administration to submit a report no later than March 29, 2019, to the congressional defense committees on a plan to work with the Iraqi government to develop the capability to detect nuclear smuggling using both fixed and mobile systems. Such plan shall also include assisting Iraq in minimizing the use of isotopic sources where appropriate and developing the infrastructure necessary to meet regulatory requirements to safely handle and store such devices.

#### **Repackaging of Transuranic Waste Drums at the Idaho National Laboratory**

On April 11, a drum of transuranic waste ruptured at the Idaho National Laboratory's Radioactive Waste Management Complex, resulting in spilled sludge in the facility and the contamination of several responding firemen with plutonium. In the immediate aftermath of this incident, the Department of Energy (DOE) found three other drums with similar contents that had also ruptured, and additional investigations on the cause of the event are ongoing. Additionally disturbing, however, is the confirmation from DOE officials that at least the initial ruptured drum had already undergone remediation to prepare it for shipment to the Waste Isolation Pilot Plant (WIPP), although it had not yet been certified for shipment. After a 2014 accident in which a transuranic waste drum prepared at Los Alamos National Laboratory ruptured in the WIPP underground, the DOE required that all of its cleanup undergo a complete review of waste preparation and certification procedures to ensure such an accident was not repeated. However, if these drums had not ruptured at the Idaho National Laboratory, it is conceivable that the incident could have occurred at the WIPP, causing further setbacks for the waste repository that is still recovering from the prior incident.

Therefore the committee directs the Government Accountability Office (GAO) to report on the repackaging of transuranic waste at the Idaho National Laboratory and determine the extent to which there are procedures in place to prevent such an incident and whether deficiencies exist in these procedures or their implementation that must be remedied. The GAO shall work with the committee on a date suitable to both parties for the final report with interim briefings on the findings.

#### **Review of National Nuclear Security Administration regulation**

The committee is aware that many of the commissions and reviews examining the governance and operations of the National Nuclear Security Administration (NNSA) have reported complaints

about overlapping, overly restrictive, and inefficient regulation from the NNSA and its laboratories and plants. Some have identified this as one source of increasing costs and failures to meet mission requirements on time. The committee believes excessive regulation may also encourage haphazard enforcement by the NNSA and extreme risk-avoidance on the part of contractors. Without a more detailed understanding of exactly which practices create unnecessary burden, however, the committee believes that NNSA will be unable to improve its regulatory practices.

Accordingly, the committee directs the Administrator of the NNSA to solicit from each of its eight national security laboratories and plants specific regulations or sources of regulation that are particularly burdensome. The Administrator shall provide such input unedited to the congressional defense committees, along with input from NNSA itself, no later than March 15, 2019. These reports shall include data supporting the frequency with which negative consequences from these practices are observed and descriptions of the specific impact of each practice in areas such as: morale, recruiting, and retention; increased costs to the government; and damage to mission capability. The reports should also identify a given practice's intended purpose and how these benefits could otherwise be achieved.

The Administrator shall also provide the complete findings to the Comptroller General of the United States, who shall brief the congressional defense committees on the extent to which findings are consistent with recommendations made by other external oversight bodies, along with any other assessment of the report.

#### **Roadmap for National Nuclear Security Administration production capability improvements**

The committee commends the Secretary of Defense for the attention in the 2018 Nuclear Posture Review (NPR) to infrastructure at the National Nuclear Security Administration (NNSA). As the NPR states, “[a]ll previous NPRs highlighted the need to maintain a modern nuclear weapons infrastructure, but the United States has fallen short in sustaining a modern infrastructure that is resilient and has the capacity to respond to unforeseen developments.”

The committee is particularly concerned about the capacity of the complex's production infrastructure, as the NNSA enters full-scale production on four life extension programs and begins planning for follow-on work as well. Resilient production infrastructure and workforce at the Pantex Plant, Savannah River Site, Kansas City National Security Campus, and Y-12 National Security Complex are just as critical to maintaining a credible nuclear deterrent as laboratory infrastructure. The committee was pleased to see the NPR recommend that NNSA develop a “roadmap that sizes production capacity to modernization and hedging requirements” and is interested in the details of this roadmap.

Therefore, the committee directs the Administrator of the NNSA to submit the detailed roadmap described in the NPR to the congressional defense committees no later than March 15, 2019, including infrastructure and staffing requirements, key milestones, and an assessment of any additional capacity needed at the

NNSA's production sites in order to meet modernization and hedging requirements.

**Status of Russian nuclear security upgrades**

Recognizing the significant investment the United States made in the past to improving nuclear material security at dozens of sites in Russia, through the National Nuclear Security Administration's (NNSA) former Material Protection, Control, and Accounting program and related programs, the Committee directs the Administrator of the NNSA to provide a report to the committee no later than January 1, 2019 on NNSA's current efforts related to Russian nuclear security.

In particular, the committee requests that this report focus on how NNSA is monitoring nuclear material security in Russia, and the extent to which NNSA-funded security improvements have been sustained over time, in light of reduced Russian cooperation. In addition, the committee directs the Comptroller General of the United States to report to the committee on these issues no later than February 1, 2019. The Comptroller General's report should address: (1) NNSA's ability to sustain investments it has made to ensure that Russia's nuclear complex and stockpiles of nuclear material remain secure; (2) How NNSA is verifying that Russia is sustaining and maintaining the nuclear material security equipment and technology supplied previously by the United States; (3) Any gaps or shortcomings that could jeopardize the sustainability of those security systems going forward; and (4) The extent to which other countries are working to support nuclear security in Russia.

**TITLE XXXII—DEFENSE NUCLEAR FACILITIES  
SAFETY BOARD**

**Authorization (sec. 3201)**

The committee recommends a provision that would authorize funding for the Defense Nuclear Facilities Safety Board at \$31.2 million consistent with the budget request.



## **TITLE XXXV—MARITIME ADMINISTRATION**

### **Maritime Administration (sec. 3501)**

The committee recommends a provision that would re-authorize certain aspects of the Maritime Administration.

### **Permanent authority of Secretary of Transportation to issue vessel war risk insurance (sec. 3502)**

The committee recommends a provision that would amend chapter 539 of title 46, United States Code, to make permanent the authority of the Secretary of Transportation to provide vessel war risk insurance. This provision was requested by the Department of Defense.



## **DIVISION D—FUNDING TABLES**

### **Authorization of amounts in funding tables (sec. 4001)**

The committee recommends a provision that would provide for the allocation of funds among programs, projects, and activities in accordance with the tables in division D of this Act, subject to re-programming in accordance with established procedures.

Consistent with the previously expressed views of the committee, the provision would also require that decisions by an agency head to commit, obligate, or expend funds to a specific entity on the basis of such funding tables be based on authorized, transparent, statutory criteria, or merit-based selection procedures in accordance with the requirements of sections 2304(k) and 2374 of title 10, United States Code, and other applicable provisions of law.



**SUMMARY OF NATIONAL DEFENSE  
AUTHORIZATIONS FOR FISCAL YEAR 2019**

## SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2019

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
<b>DISCRETIONARY AUTHORIZATIONS WITHIN THE JURISDICTION OF THE ARMED SERVICES COMMITTEE</b>			
<b>NATIONAL DEFENSE BASE BUDGET</b>			
<b>DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)</b>			
<b>DIVISION A: DEPARTMENT OF DEFENSE AUTHORIZATIONS</b>			
<b>TITLE I--PROCUREMENT</b>			
AIRCRAFT PROCUREMENT, ARMY .....	3,782,558		3,782,558
MISSILE PROCUREMENT, ARMY .....	3,355,777	420,000	3,775,777
PROCUREMENT OF W&TCV, ARMY .....	4,489,118	-314,000	4,175,118
PROCUREMENT OF AMMUNITION, ARMY .....	2,234,761	-106,700	2,128,061
OTHER PROCUREMENT, ARMY .....	7,999,529	-263,200	7,736,329
AIRCRAFT PROCUREMENT, NAVY .....	19,041,799	175,400	19,217,199
WEAPONS PROCUREMENT, NAVY .....	3,702,393	-21,900	3,680,493
PROCUREMENT OF AMMO, NAVY & MC .....	1,006,209	-13,000	993,209
SHIPBUILDING AND CONVERSION, NAVY .....	21,871,437	1,255,500	23,126,937
OTHER PROCUREMENT, NAVY .....	9,414,355	-40,500	9,373,855
PROCUREMENT, MARINE CORPS .....	2,860,410	-113,476	2,746,934
AIRCRAFT PROCUREMENT, AIR FORCE .....	16,206,937	413,800	16,620,737
MISSILE PROCUREMENT, AIR FORCE .....	2,669,454	2,200	2,671,654
SPACE PROCUREMENT, AIR FORCE .....	2,527,542		2,527,542
PROCUREMENT OF AMMUNITION, AIR FORCE .....	1,587,304		1,587,304
OTHER PROCUREMENT, AIR FORCE .....	20,890,164	78,096	20,968,260
PROCUREMENT, DEFENSE-WIDE .....	6,786,271	500	6,786,771
JOINT URGENT OPERATIONAL NEEDS FUND .....	100,025		100,025
<b>SUBTOTAL, TITLE I--PROCUREMENT .....</b>	<b>130,526,043</b>	<b>1,472,720</b>	<b>131,998,763</b>
<b>TITLE II--RESEARCH, DEVELOPMENT, TEST AND EVALUATION</b>			
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY .....	10,159,379	119,572	10,278,951
RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY .....	18,481,666	55,177	18,536,843
RESEARCH, DEVELOPMENT, TEST & EVAL, AF .....	40,178,343	574,901	40,753,244
RESEARCH, DEVELOPMENT, TEST & EVAL, DW .....	22,016,553	399,038	22,415,591
OPERATIONAL TEST & EVAL, DEFENSE .....	221,009	10,900	231,909
<b>SUBTOTAL, TITLE II--RESEARCH, DEVELOPMENT, TEST AND EVALUATION .....</b>	<b>91,056,950</b>	<b>1,159,588</b>	<b>92,216,538</b>
<b>TITLE III--OPERATION AND MAINTENANCE</b>			
OPERATION & MAINTENANCE, ARMY .....	42,009,317	-385,700	41,623,617
OPERATION & MAINTENANCE, ARMY RES .....	2,916,909		2,916,909
OPERATION & MAINTENANCE, ARNG .....	7,399,295		7,399,295
OPERATION & MAINTENANCE, NAVY .....	49,003,633	362,700	49,366,333
OPERATION & MAINTENANCE, MARINE CORPS .....	6,832,510		6,832,510
OPERATION & MAINTENANCE, NAVY RES .....	1,027,006		1,027,006
OPERATION & MAINTENANCE, MC RESERVE .....	271,570		271,570
OPERATION & MAINTENANCE, AIR FORCE .....	42,060,568	902,700	42,963,268
OPERATION & MAINTENANCE, AF RESERVE .....	3,260,234	54,800	3,315,034

## SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2019—Continued

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
OPERATION & MAINTENANCE, ANG .....	6,427,622	12,600	6,440,222
OPERATION AND MAINTENANCE, DEFENSE-WIDE .....	36,352,625	162,100	36,514,725
MISCELLANEOUS APPROPRIATIONS .....	1,908,347	-11,000	1,897,347
UNDISTRIBUTED .....	0	-216,520	-216,520
<b>SUBTOTAL, TITLE III--OPERATION AND MAINTENANCE</b>	<b>199,469,636</b>	<b>881,680</b>	<b>200,351,316</b>
<b>TITLE IV--MILITARY PERSONNEL</b>			
MILITARY PERSONNEL .....	140,689,301	-3,062,080	137,627,221
MEDICARE-ELIGIBLE RETIREE HEALTH FUND CON- TRIBUTIONS .....	7,533,090		7,533,090
<b>SUBTOTAL, TITLE IV--MILITARY PERSONNEL</b> .....	<b>148,222,391</b>	<b>-3,062,080</b>	<b>145,160,311</b>
<b>TITLE XIV--OTHER AUTHORIZATIONS</b>			
WORKING CAPITAL FUND .....	1,542,115		1,542,115
CHEM AGENTS & MUNITIONS DESTRUCTION .....	993,816		993,816
DRUG INTERDICTION & CTR-DRUG ACTIVITIES, DEF ...	787,525		787,525
OFFICE OF THE INSPECTOR GENERAL .....	329,273		329,273
DEFENSE HEALTH PROGRAM .....	33,729,192	2,500	33,731,692
<b>SUBTOTAL, TITLE XIV--OTHER AUTHORIZATIONS</b> .....	<b>37,381,921</b>	<b>2,500</b>	<b>37,384,421</b>
<b>TOTAL, DIVISION A: DEPARTMENT OF DEFENSE AU- THORIZATIONS</b> .....	<b>606,656,941</b>	<b>454,408</b>	<b>607,111,349</b>
<b>DIVISION B: MILITARY CONSTRUCTION AUTHORIZATIONS</b>			
<b>MILITARY CONSTRUCTION</b>			
ARMY .....	1,011,768	107,600	1,119,368
NAVY .....	2,543,189	29,563	2,572,752
AIR FORCE .....	1,725,707	26,450	1,752,157
DEFENSE-WIDE .....	2,693,324	-290,036	2,403,288
ARMY NATIONAL GUARD .....	180,122	126,000	306,122
AIR NATIONAL GUARD .....	129,126	54,000	183,126
ARMY RESERVE .....	64,919		64,919
NAVY RESERVE .....	43,065		43,065
AIR FORCE RESERVE .....	50,163	14,400	64,563
NATO SECURITY INVESTMENT PROGRAM .....	171,064		171,064
<b>SUBTOTAL, MILITARY CONSTRUCTION</b> .....	<b>8,612,447</b>	<b>67,977</b>	<b>8,680,424</b>
<b>FAMILY HOUSING</b>			
CONSTRUCTION, ARMY .....	330,660		330,660
OPERATION AND MAINTENANCE, ARMY .....	376,509		376,509
CONSTRUCTION, NAVY AND MARINE CORPS .....	104,581		104,581
OPERATION AND MAINTENANCE, NAVY AND MARINE CORPS .....	314,536		314,536
CONSTRUCTION, AIR FORCE .....	78,446		78,446
OPERATION AND MAINTENANCE, AIR FORCE .....	317,274		317,274
OPERATION AND MAINTENANCE, DEFENSE-WIDE .....	58,373		58,373
IMPROVEMENT FUND .....	1,653		1,653
UNACCOMP HSG IMPRV FUND .....	600		600

## SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2019—Continued

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
<b>SUBTOTAL, FAMILY HOUSING</b> .....	<b>1,582,632</b>	<b>0</b>	<b>1,582,632</b>
<b>BASE REALIGNMENT AND CLOSURE</b>			
ARMY .....	62,796		62,796
NAVY .....	151,839		151,839
AIR FORCE .....	52,903		52,903
<b>SUBTOTAL, BASE REALIGNMENT AND CLOSURE</b> .....	<b>267,538</b>	<b>0</b>	<b>267,538</b>
<b>TOTAL, DIVISION B: MILITARY CONSTRUCTION AUTHORIZATIONS</b> .....	<b>10,462,617</b>	<b>67,977</b>	<b>10,530,594</b>
<b>TOTAL, DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)</b> .....	<b>617,119,558</b>	<b>522,385</b>	<b>617,641,943</b>
<b>ATOMIC ENERGY DEFENSE ACTIVITIES (BUDGET SUB-FUNCTION 053)</b>			
<b>DIVISION C: DEPARTMENT OF ENERGY NATIONAL SECURITY AND INDEPENDENT FEDERAL AGENCY AUTHORIZATIONS</b>			
<b>DEPARTMENT OF ENERGY AUTHORIZATIONS</b>			
<b>DISCRETIONARY SUMMARY BY APPROPRIATION</b>			
<b>ENERGY AND WATER DEVELOPMENT, AND RELATED AGENCIES</b>			
<b>ENERGY PROGRAMS</b>			
NUCLEAR ENERGY .....	136,090		136,090
<b>SUBTOTAL, ENERGY PROGRAMS</b> .....	<b>136,090</b>	<b>0</b>	<b>136,090</b>
<b>NATIONAL NUCLEAR SECURITY ADMINISTRATION</b>			
WEAPONS ACTIVITIES .....	11,017,078		11,017,078
DEFENSE NUCLEAR NONPROLIFERATION .....	1,862,825		1,862,825
NAVAL REACTORS .....	1,788,618		1,788,618
FEDERAL SALARIES AND EXPENSES .....	422,529		422,529
<b>SUBTOTAL, NATIONAL NUCLEAR SECURITY ADMINISTRATION</b> .....	<b>15,091,050</b>	<b>0</b>	<b>15,091,050</b>
<b>ENVIRONMENTAL AND OTHER DEFENSE ACTIVITIES</b>			
DEFENSE ENVIRONMENTAL CLEANUP .....	5,630,217		5,630,217
OTHER DEFENSE ACTIVITIES .....	853,300		853,300
DEFENSE NUCLEAR WASTE DISPOSAL .....	30,000	-30,000	0
<b>SUBTOTAL, ENVIRONMENTAL &amp; OTHER DEFENSE ACTIVITIES</b> .....	<b>6,513,517</b>	<b>-30,000</b>	<b>6,483,517</b>
<b>SUBTOTAL, DEPARTMENT OF ENERGY AUTHORIZATIONS</b> .....	<b>21,740,657</b>	<b>-30,000</b>	<b>21,710,657</b>
<b>INDEPENDENT FEDERAL AGENCY AUTHORIZATION</b>			
DEFENSE NUCLEAR FACILITIES SAFETY BOARD .....	31,200		31,200

## SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2019—Continued

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
<b>SUBTOTAL, INDEPENDENT FEDERAL AGENCY AUTHORIZATION</b> .....	31,200	0	31,200
<b>TOTAL, DIVISION C: DEPARTMENT OF ENERGY NATIONAL SECURITY AND INDEPENDENT FEDERAL AGENCY AUTHORIZATIONS</b> .....	21,771,857	-30,000	21,741,857
<b>ATOMIC ENERGY DEFENSE ACTIVITIES (BUDGET SUB-FUNCTION 053)</b> .....	21,771,857	-30,000	21,741,857
<b>TOTAL, NATIONAL DEFENSE FUNDING, BASE BUDGET REQUEST</b> .....	638,891,415	492,385	639,383,800
<b>NATIONAL DEFENSE OCO BUDGET REQUEST</b>			
<b>DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)</b>			
<b>PROCUREMENT</b>			
AIRCRAFT PROCUREMENT, ARMY .....	363,363		363,363
MISSILE PROCUREMENT, ARMY .....	1,802,351		1,802,351
PROCUREMENT OF W&TCV, ARMY .....	1,107,183		1,107,183
PROCUREMENT OF AMMUNITION, ARMY .....	309,525		309,525
OTHER PROCUREMENT, ARMY .....	1,382,047		1,382,047
AIRCRAFT PROCUREMENT, NAVY .....	80,119		80,119
WEAPONS PROCUREMENT, NAVY .....	14,134	82,800	96,934
PROCUREMENT OF AMMO, NAVY & MC .....	246,541	-2,000	244,541
OTHER PROCUREMENT, NAVY .....	187,173		187,173
PROCUREMENT, MARINE CORPS .....	58,023		58,023
AIRCRAFT PROCUREMENT, AIR FORCE .....	1,018,888		1,018,888
MISSILE PROCUREMENT, AIR FORCE .....	493,526	22,800	516,326
PROCUREMENT OF AMMUNITION, AIR FORCE .....	1,421,516		1,421,516
OTHER PROCUREMENT, AIR FORCE .....	3,725,944		3,725,944
PROCUREMENT, DEFENSE-WIDE .....	572,135		572,135
<b>SUBTOTAL, PROCUREMENT</b> .....	<b>12,782,468</b>	<b>103,600</b>	<b>12,886,068</b>
<b>RESEARCH, DEVELOPMENT, TEST AND EVALUATION</b>			
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY .....	325,104		325,104
RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY .....	167,812		167,812
RESEARCH, DEVELOPMENT, TEST & EVAL, AF .....	314,271		314,271
RESEARCH, DEVELOPMENT, TEST & EVAL, DW .....	500,544		500,544
<b>SUBTOTAL, RESEARCH, DEVELOPMENT, TEST AND EVALUATION</b> .....	<b>1,307,731</b>	<b>0</b>	<b>1,307,731</b>
<b>OPERATION AND MAINTENANCE</b>			
OPERATION & MAINTENANCE, ARMY .....	18,210,500		18,210,500
OPERATION & MAINTENANCE, ARMY RES .....	41,887		41,887
OPERATION & MAINTENANCE, ARNG .....	110,729		110,729
AFGHANISTAN SECURITY FORCES FUND .....	4,497,421		4,497,421

## SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2019—Continued

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
AFGHANISTAN SECURITY FORCES FUND .....	702,029		702,029
OPERATION & MAINTENANCE, NAVY .....	4,757,155		4,757,155
OPERATION & MAINTENANCE, MARINE CORPS .....	1,121,900		1,121,900
OPERATION & MAINTENANCE, NAVY RES .....	25,637		25,637
OPERATION & MAINTENANCE, MC RESERVE .....	3,345		3,345
OPERATION & MAINTENANCE, AIR FORCE .....	9,285,789		9,285,789
OPERATION & MAINTENANCE, AF RESERVE .....	60,500		60,500
OPERATION & MAINTENANCE, ANG .....	15,870		15,870
OPERATION AND MAINTENANCE, DEFENSE-WIDE .....	8,549,908	-550,000	7,999,908
<b>SUBTOTAL, OPERATION AND MAINTENANCE .....</b>	<b>47,382,670</b>	<b>-550,000</b>	<b>46,832,670</b>
<b>MILITARY PERSONNEL</b>			
MILITARY PERSONNEL .....	4,660,661		4,660,661
<b>SUBTOTAL, MILITARY PERSONNEL .....</b>	<b>4,660,661</b>	<b>0</b>	<b>4,660,661</b>
<b>OTHER AUTHORIZATIONS</b>			
WORKING CAPITAL FUND .....	15,190		15,190
DRUG INTERDICTION & CTR-DRUG ACTIVITIES, DEF ...	153,100		153,100
OFFICE OF THE INSPECTOR GENERAL .....	24,692		24,692
DEFENSE HEALTH PROGRAM .....	352,068		352,068
COUNTER-ISIS TRAIN AND EQUIP FUND .....	1,400,000		1,400,000
<b>SUBTOTAL, OTHER AUTHORIZATIONS .....</b>	<b>1,945,050</b>	<b>0</b>	<b>1,945,050</b>
<b>MILITARY CONSTRUCTION</b>			
ARMY .....	261,250	-69,000	192,250
NAVY .....	227,320		227,320
AIR FORCE .....	345,800		345,800
DEFENSE-WIDE .....	87,050		87,050
<b>SUBTOTAL, MILITARY CONSTRUCTION .....</b>	<b>921,420</b>	<b>-69,000</b>	<b>852,420</b>
<b>TOTAL, NATIONAL DEFENSE (BUDGET FUNCTION 050)</b>			
<b>OCO BUDGET REQUEST .....</b>	<b>69,000,000</b>	<b>-515,400</b>	<b>68,484,600</b>
<b>TOTAL, NATIONAL DEFENSE (BUDGET FUNCTION 050)</b>	<b>707,891,415</b>	<b>-23,015</b>	<b>707,868,400</b>
<b>MEMORANDUM: NON-DEFENSE AUTHORIZATIONS</b>			
TITLE XIV—ARMED FORCES RETIREMENT HOME (FUNCTION 600) .....	64,300		64,300
<b>MEMORANDUM: TRANSFER AUTHORITIES (NON-ADDS)</b>			
TITLE X—GENERAL TRANSFER AUTHORITY .....	[5,000,000]		[4,500,000]
TITLE XV—SPECIAL TRANSFER AUTHORITY .....	[4,500,000]		[3,500,000]

**NATIONAL DEFENSE BUDGET AUTHORITY  
IMPLICATION**

**NATIONAL DEFENSE BUDGET AUTHORITY IMPLICATION**

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
<b>SUMMARY DISCRETIONARY AUTHORIZATIONS WITHIN THE JURISDICTION OF THE ARMED SERVICES COMMITTEE</b>			
<b>NATIONAL DEFENSE (050)</b>			
DEPARTMENT OF DEFENSE-MILITARY, BASE BUDGET			
(051) .....	617,119,558	522,385	617,641,943
ATOMIC ENERGY DEFENSE ACTIVITIES (053) .....	21,771,857	-30,000	21,741,857
OVERSEAS CONTINGENCY OPERATIONS .....	69,000,000	-515,400	68,484,600
<b>TOTAL, NATIONAL DEFENSE (050) .....</b>	<b>707,891,415</b>	<b>-23,015</b>	<b>707,868,400</b>
<b>OTHER DEFENSE DISCRETIONARY AUTHORIZATIONS PROGRAMS OUTSIDE THE JURISDICTION OF THE ARMED SERVICES COMMITTEE OR ALREADY AUTHORIZED</b>			
<b>DEPARTMENT OF DEFENSE-MILITARY (051)</b>			
DEFENSE PRODUCTION ACT PURCHASES .....	39,000		39,000
INDEFINITE ACCOUNT: DISPOSAL OF DOD REAL PROPERTY .....	8,000		8,000
INDEFINITE ACCOUNT: LEASE OF DOD REAL PROPERTY ...	36,000		36,000
<b>SUBTOTAL, DEPARTMENT OF DEFENSE-MILITARY (051) ...</b>	<b>83,000</b>	<b>0</b>	<b>83,000</b>
<b>ATOMIC ENERGY DEFENSE ACTIVITIES (053)</b>			
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	120,000		120,000
<b>SUBTOTAL, ATOMIC ENERGY DEFENSE ACTIVITIES (053)</b>	<b>120,000</b>	<b>0</b>	<b>120,000</b>
<b>DEFENSE-RELATED ACTIVITIES (054)</b>			
OTHER DISCRETIONARY PROGRAMS .....	8,034,000		8,034,000
<b>SUBTOTAL, DEFENSE-RELATED ACTIVITIES (054) .....</b>	<b>8,034,000</b>	<b>0</b>	<b>8,034,000</b>
<b>TOTAL, OTHER DEFENSE DISCRETIONARY AUTHORIZATIONS (050) .....</b>	<b>8,237,000</b>	<b>0</b>	<b>8,237,000</b>
<b>DISCRETIONARY BUDGET AUTHORITY IMPLICATION (050)</b>			
<b>NATIONAL DEFENSE DISCRETIONARY AUTHORIZATIONS (050)</b>			
DEPARTMENT OF DEFENSE--MILITARY (051) .....	686,202,558	6,985	686,209,543
ATOMIC ENERGY DEFENSE ACTIVITIES (053) .....	21,891,857	-30,000	21,861,857
DEFENSE-RELATED ACTIVITIES (054) .....	8,034,000		8,034,000
<b>TOTAL, DISCRETIONARY BUDGET AUTHORITY IMPLICATION, 050 .....</b>	<b>716,128,415</b>	<b>-23,015</b>	<b>716,105,400</b>
<b>NATIONAL DEFENSE MANDATORY PROGRAMS, CURRENT LAW (CBO BASELINE)</b>			
<b>DEPARTMENT OF DEFENSE-MILITARY (051)</b>			
CONCURRENT RECEIPT ACCRUAL PAYMENTS TO THE MILITARY RETIREMENT FUND .....	7,720,000		7,720,000
REVOLVING, TRUST AND OTHER DOD MANDATORY .....	1,794,000		1,794,000
OFFSETTING RECEIPTS .....	-1,855,000		-1,855,000
<b>SUBTOTAL, DEPARTMENT OF DEFENSE-MILITARY (051) ...</b>	<b>7,659,000</b>	<b>0</b>	<b>7,659,000</b>

## NATIONAL DEFENSE BUDGET AUTHORITY IMPLICATION—Continued

(In Thousands of Dollars)

	FY 2019 Request	Senate Change	Senate Authorized
<b>ATOMIC ENERGY DEFENSE ACTIVITIES (053)</b>			
ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COM- PENSATION PROGRAMS AND OTHER .....	1,277,000		1,277,000
<b>SUBTOTAL, ATOMIC ENERGY DEFENSE ACTIVITIES (053)</b>	<b>1,277,000</b>	<b>0</b>	<b>1,277,000</b>
<b>DEFENSE-RELATED ACTIVITIES (054)</b>			
RADIATION EXPOSURE COMPENSATION TRUST FUND .....	50,000		50,000
PAYMENT TO CIA RETIREMENT FUND AND OTHER .....	514,000		514,000
<b>SUBTOTAL, DEFENSE-RELATED ACTIVITIES (054)</b>	<b>564,000</b>	<b>0</b>	<b>564,000</b>
<b>TOTAL, NATIONAL DEFENSE MANDATORY PROGRAMS (050) .....</b>	<b>9,500,000</b>	<b>0</b>	<b>9,500,000</b>
<b>DISCRETIONARY AND MANDATORY BUDGET AUTHORITY IMPLICATION (050)</b>			
<b>DISCRETIONARY AND MANDATORY BUDGET AUTHORITY IMPLICATION (050)</b>			
DEPARTMENT OF DEFENSE--MILITARY (051) .....	693,861,558	6,985	693,868,543
ATOMIC ENERGY DEFENSE ACTIVITIES (053) .....	23,168,857	-30,000	23,138,857
DEFENSE-RELATED ACTIVITIES (054) .....	8,598,000		8,598,000
<b>TOTAL, BUDGET AUTHORITY IMPLICATION (050) .....</b>	<b>725,628,415</b>	<b>-23,015</b>	<b>725,605,400</b>



## **TITLE XLI—PROCUREMENT**

# TITLE XLI—PROCUREMENT

## SEC. 4101. PROCUREMENT.

### SEC. 4101. PROCUREMENT (In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>AIRCRAFT PROCUREMENT, ARMY</b>							
<b>FIXED WING</b>							
2	UTILITY F/W AIRCRAFT .....	0	744			0	744
3	MQ-1 UAV .....	0	43,326			0	43,326
4	RQ-11 (RAVEN) .....	0	46,416			0	46,416
<b>ROTARY</b>							
7	AH-64 APACHE BLOCK IIIA REMAN .....	48	753,248			48	753,248
8	AH-64 APACHE BLOCK IIIA REMAN AP .....	0	174,550			0	174,550
9	AH-64 APACHE BLOCK IIIB NEW BUILD .....	12	284,687			12	284,687
10	AH-64 APACHE BLOCK IIIB NEW BUILD AP .....	0	58,600			0	58,600
11	UH-60 BLACKHAWK M MODEL (MYP) .....	49	988,810			49	988,810
12	UH-60 BLACKHAWK M MODEL (MYP) AP .....	0	106,150			0	106,150
13	UH-60 BLACK HAWK A AND L MODELS .....	18	146,138			18	146,138
14	CH-47 HELICOPTER .....	6	99,278			6	99,278
15	CH-47 HELICOPTER AP .....	0	24,235			0	24,235
<b>MODIFICATION OF AIRCRAFT</b>							
18	UNIVERSAL GROUND CONTROL EQUIPMENT (UAS) .....	0	27,114			0	27,114
19	GRAY EAGLE MODS2 .....	0	97,781			0	97,781
20	MULTI SENSOR ABN RECON (MIP) .....	0	52,274			0	52,274
21	AH-64 MODS .....	0	104,996			0	104,996

22	CH-47 CARGO HELICOPTER MODS (MYP)	0	7,807	0	7,807
23	GROS SEMA MODS (MIP)	0	5,573	0	5,573
24	ARL SEMA MODS (MIP)	0	7,522	0	7,522
25	EMARSS SEMA MODS (MIP)	0	20,448	0	20,448
26	UTILITY/CARGO AIRPLANE MODS	0	17,719	0	17,719
27	UTILITY HELICOPTER MODS	0	6,443	0	6,443
28	NETWORK AND MISSION PLAN	0	123,614	0	123,614
29	COMMS, NAV SURVEILLANCE	0	161,969	0	161,969
30	DEGRADED VISUAL ENVIRONMENT	0	30,000	0	30,000
31	GATM ROLLUP	0	26,848	0	26,848
32	RQ-7 UAV MODS	0	103,246	0	103,246
33	UAS MODS	0	17,644	0	17,644
	<b>GROUND SUPPORT AVIONICS</b>				
34	AIRCRAFT SURVIVABILITY EQUIPMENT	0	57,170	0	57,170
35	SURVIVABILITY CM	0	5,853	0	5,853
36	CMWS	0	13,496	0	13,496
37	COMMON INFRARED COUNTERMEASURES (CIRCM)	0	36,839	0	36,839
	<b>OTHER SUPPORT</b>				
38	AVIONICS SUPPORT EQUIPMENT	0	1,778	0	1,778
39	COMMON GROUND EQUIPMENT	0	34,818	0	34,818
40	AIRCREW INTEGRATED SYSTEMS	0	27,243	0	27,243
41	AIR TRAFFIC CONTROL	0	63,872	0	63,872
42	INDUSTRIAL FACILITIES	0	1,417	0	1,417
43	LAUNCHER, 2.75 ROCKET	0	1,901	0	1,901
44	LAUNCHER GUIDED MISSILE: LONGBOW HELFIRE XM2	0	991	0	991
	<b>TOTAL AIRCRAFT PROCUREMENT, ARMY</b>	<b>133</b>	<b>3,782,558</b>	<b>0</b>	<b>3,782,558</b>
	<b>MISSILE PROCUREMENT, ARMY</b>				
	<b>SURFACE-TO-AIR MISSILE SYSTEM</b>				
1	LOWER TIER AIR AND MISSILE DEFENSE (AMD)	0	111,395	0	111,395
2	MSE MISSILE	179	871,276	179	871,276
3	INDIRECT FIRE PROTECTION CAPABILITY INC 2-I	0	145,636	0	145,636
			500,000		645,636

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	Acceleration of cruise missile defense .....			[0]	[500,000]		
4	INDIRECT FIRE PROTECTION CAPABILITY INC 2-I AP .....	0	31,286			0	31,286
	<b>AIR-TO-SURFACE MISSILE SYSTEM</b>						
6	JOINT AIR-TO-GROUND MSLS (JAGM) .....	1,046	276,462			1,046	276,462
	<b>ANTI-TANK/ASSAULT MISSILE SYS</b>						
8	JAVELIN (AAWS-M) SYSTEM SUMMARY .....	709	303,665			709	303,665
9	TOW 2 SYSTEM SUMMARY .....	1,472	105,014			1,472	105,014
10	TOW 2 SYSTEM SUMMARY AP .....	0	19,949			0	19,949
11	GUIDED MLRS ROCKET (GMLRS) .....	3,267	359,613			3,267	359,613
12	MLRS REDUCED RANGE PRACTICE ROCKETS (RRPR) .....	2,214	20,964			2,214	20,964
	<b>MODIFICATIONS</b>						
15	PATRIOT MODS .....	0	313,228			0	313,228
16	ATACMS MODS .....	0	221,656	-82	-80,000	-82	141,656
	Requested quantity exceeds maximum .....			[-82]	[-80,000]		
17	GMLRS MOD .....	0	266			0	266
18	STINGER MODS .....	0	94,756			0	94,756
19	AVENGER MODS .....	0	48,670			0	48,670
20	ITAS/TOW MODS .....	0	3,173			0	3,173
21	MLRS MODS .....	0	383,216			0	383,216
22	HIMARS MODIFICATIONS .....	0	10,196			0	10,196
	<b>SPARES AND REPAIR PARTS</b>						
23	SPARES AND REPAIR PARTS .....	0	27,737			0	27,737
	<b>SUPPORT EQUIPMENT &amp; FACILITIES</b>						
24	AIR DEFENSE TARGETS .....	0	6,417			0	6,417
25	PRODUCTION BASE SUPPORT .....	0	1,202			0	1,202
	<b>TOTAL MISSILE PROCUREMENT, ARMY</b> .....	<b>8,887</b>	<b>3,355,777</b>	<b>-82</b>	<b>420,000</b>	<b>8,805</b>	<b>3,775,777</b>



SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
27	COMMON REMOTELY OPERATED WEAPONS STATION .....	0	35,968			0	35,968
28	HANDGUN .....	0	48,251			0	48,251
	<b>MOD OF WEAPONS AND OTHER COMBAT VEH</b>						
29	MK-19 GRENADE MACHINE GUN MODS .....	0	1,684			0	1,684
30	M777 MODS .....	0	3,086			0	3,086
31	M4 CARBINE MODS .....	0	31,575			0	31,575
32	M2 50 CAL MACHINE GUN MODS .....	0	21,600			0	21,600
33	M249 SAW MACHINE GUN MODS .....	0	3,924			0	3,924
34	M240 MEDIUM MACHINE GUN MODS .....	0	6,940			0	6,940
35	SNIPER RIFLES MODIFICATIONS .....	0	2,747			0	2,747
36	M119 MODIFICATIONS .....	0	5,704			0	5,704
37	MORTAR MODIFICATION .....	0	3,965			0	3,965
38	MODIFICATIONS LESS THAN \$5.0M (WOCV-WTCV) .....	0	5,577			0	5,577
	<b>SUPPORT EQUIPMENT &amp; FACILITIES</b>						
39	ITEMS LESS THAN \$5.0M (WOCV-WTCV) .....	0	3,174			0	3,174
40	PRODUCTION BASE SUPPORT (WOCV-WTCV) .....	0	3,284			0	3,284
41	SMALL ARMS EQUIPMENT (SOLDIER ENH PROG) .....	0	1,640			0	1,640
	<b>TOTAL PROCUREMENT OF W&amp;TCV, ARMY .....</b>	<b>327</b>	<b>4,489,118</b>	<b>0</b>	<b>-314,000</b>	<b>327</b>	<b>4,175,118</b>
	<b>PROCUREMENT OF AMMUNITION, ARMY</b>						
	<b>SMALL/MEDIUM CAL AMMUNITION</b>						
1	CTG, 5.56MM, ALL TYPES .....	0	41,848	0	-6,700	0	35,148
	FY2018 Omnibus forward finance .....			[0]	[-6,700]		
2	CTG, 7.62MM, ALL TYPES .....	0	86,199			0	86,199
3	CTG, HANDGUN, ALL TYPES .....	0	20,158			0	20,158
4	CTG, .50 CAL, ALL TYPES .....	0	65,573			0	65,573

5	CTG, 20MM, ALL TYPES .....	0	8,198	0	8,198
7	CTG, 30MM, ALL TYPES .....	0	77,995	0	77,995
8	CTG, 40MM, ALL TYPES .....	0	69,781	0	69,781
	<b>MORTAR AMMUNITION</b>				
9	60MM MORTAR, ALL TYPES .....	0	45,280	0	45,280
10	81MM MORTAR, ALL TYPES .....	0	46,853	0	46,853
11	120MM MORTAR, ALL TYPES .....	0	83,003	0	83,003
	<b>TANK AMMUNITION</b>				
12	CARTRIDGES, TANK, 105MM AND 120MM, ALL TYPES .....	0	168,101	0	168,101
	<b>ARTILLERY AMMUNITION</b>				
13	ARTILLERY CARTRIDGES, 75MM & 105MM, ALL TYPES .....	0	39,341	0	39,341
14	ARTILLERY PROJECTILE, 155MM, ALL TYPES .....	0	211,442	0	211,442
15	PROJ 155MM EXTENDED RANGE M982 .....	1,189	100,906	1,189	100,906
16	ARTILLERY PROPELLANTS, FUZES AND PRIMERS, ALL .....	0	236,677	0	236,677
	Ammunition Cuts .....			0	-100,000
				[0]	[-100,000]
	<b>MINES</b>				
17	MINES & CLEARING CHARGES, ALL TYPES .....	0	15,905	0	15,905
	<b>ROCKETS</b>				
18	SHOULDER LAUNCHED MUNITIONS, ALL TYPES .....	0	4,503	0	4,503
19	ROCKET, HYDRA 70, ALL TYPES .....	0	211,211	0	211,211
	<b>OTHER AMMUNITION</b>				
20	CAD/PAD, ALL TYPES .....	0	10,428	0	10,428
21	DEMOLITION MUNITIONS, ALL TYPES .....	0	44,656	0	44,656
22	GRENADES, ALL TYPES .....	0	19,896	0	19,896
23	SIGNALS, ALL TYPES .....	0	10,121	0	10,121
24	SIMULATORS, ALL TYPES .....	0	11,464	0	11,464
	<b>MISCELLANEOUS</b>				
25	AMMO COMPONENTS, ALL TYPES .....	0	5,224	0	5,224
26	NON-LETHAL AMMUNITION, ALL TYPES .....	0	4,310	0	4,310
27	ITEMS LESS THAN \$5 MILLION (AMMO) .....	0	11,193	0	11,193
28	AMMUNITION PECULIAR EQUIPMENT .....	0	10,500	0	10,500
29	FIRST DESTINATION TRANSPORTATION (AMMO) .....	0	18,456	0	18,456

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
30	CLOSEOUT LIABILITIES .....	0	100			0	100
	<b>PRODUCTION BASE SUPPORT</b>						
32	INDUSTRIAL FACILITIES .....	0	394,133			0	394,133
33	CONVENTIONAL MUNITIONS DEMILITARIZATION .....	0	157,535			0	157,535
34	ARMS INITIATIVE .....	0	3,771			0	3,771
	<b>TOTAL PROCUREMENT OF AMMUNITION, ARMY .....</b>	<b>1,189</b>	<b>2,234,761</b>	<b>0</b>	<b>-106,700</b>	<b>1,189</b>	<b>2,128,061</b>
	<b>OTHER PROCUREMENT, ARMY</b>						
	<b>TACTICAL VEHICLES</b>						
1	TACTICAL TRAILERS/DOLLY SETS .....	0	16,512			0	16,512
2	SEMITRAILERS, FLATBED: .....	0	16,951			0	16,951
3	AMBULANCE, 4 LITTER, 5/4 TON, 4X4 .....	0	50,123			0	50,123
4	GROUND MOBILITY VEHICLES (GMV) .....	0	46,988			0	46,988
6	JOINT LIGHT TACTICAL VEHICLE .....	0	1,319,436	0	-250,000	0	1,069,436
	Program reduction .....			[0]	[-250,000]		
7	TRUCK, DUMP, 20T (CCE) .....	0	6,480			0	6,480
8	FAMILY OF MEDIUM TACTICAL VEH (FMTV) .....	0	132,882			0	132,882
9	FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIP .....	0	14,842			0	14,842
10	FAMILY OF HEAVY TACTICAL VEHICLES (FHIV) .....	0	138,105			0	138,105
12	HVY EXPANDED MOBILE TACTICAL TRUCK EXT SERV .....	0	31,892			0	31,892
13	TACTICAL WHEELED VEHICLE PROTECTION KITS .....	0	38,128			0	38,128
14	MODIFICATION OF IN SVC EQUIP .....	0	78,507			0	78,507
	<b>NON-TACTICAL VEHICLES</b>						
16	HEAVY ARMORED VEHICLE .....	0	790			0	790
17	PASSENGER CARRYING VEHICLES .....	0	1,390			0	1,390
18	NONTACTICAL VEHICLES, OTHER .....	0	15,415			0	15,415

20	<b>COMM—JOINT COMMUNICATIONS</b>				
	SIGNAL MODERNIZATION PROGRAM .....	0	150,777	0	150,777
21	TACTICAL NETWORK TECHNOLOGY MOD IN SVC .....	0	469,117	0	469,117
22	SITUATION INFORMATION TRANSPORT .....	0	62,727	0	62,727
23	JOINT INCIDENT SITE COMMUNICATIONS CAPABILITY .....	0	13,895	0	13,895
24	JCSE EQUIPMENT (USREDCOM) .....	0	4,866	0	4,866
	<b>COMM—SATELLITE COMMUNICATIONS</b>				
27	DEFENSE ENTERPRISE WIDEBAND SATCOM SYSTEMS .....	0	108,133	0	108,133
28	TRANSPORTABLE TACTICAL COMMAND COMMUNICATIONS .....	0	56,737	0	56,737
29	SHF TERM .....	0	13,100	0	13,100
30	SMART-T (SPACE) .....	0	9,160	0	9,160
31	GLOBAL BROADCAST SVC—GBS .....	0	25,647	0	25,647
32	ENROUTE MISSION COMMAND (EMC) .....	0	37,401	0	37,401
	<b>COMM—C3 SYSTEM</b>				
36	COE TACTICAL SERVER INFRASTRUCTURE (TSI) .....	0	20,500	0	20,500
	<b>COMM—COMBAT COMMUNICATIONS</b>				
38	HANDHELD MANPACK SMALL FORM FIT (HMS) .....	0	351,565	0	351,565
40	RADIO TERMINAL SET, MIDS LVT(2) .....	0	4,641	0	4,641
41	TRACTOR DESK .....	0	2,187	0	2,187
42	TRACTOR RIDE .....	0	9,411	0	9,411
44	SPIDER FAMILY OF NETWORKED MUNITIONS INCR .....	0	17,515	0	17,515
45	TACTICAL COMMUNICATIONS AND PROTECTIVE SYSTEM .....	0	819	0	819
46	UNIFIED COMMAND SUITE .....	0	17,807	0	17,807
47	COTS COMMUNICATIONS EQUIPMENT .....	0	191,835	0	191,835
48	FAMILY OF MED COMM FOR COMBAT CASUALTY CARE .....	0	25,177	0	25,177
	<b>COMM—INTELLIGENCE COMM</b>				
50	CI AUTOMATION ARCHITECTURE (MIP) .....	0	9,740	0	9,740
51	DEFENSE MILITARY DECEPTION INITIATIVE .....	0	2,667	0	2,667
	<b>INFORMATION SECURITY</b>				
53	FAMILY OF BIOMETRICS .....	0	8,319	0	8,319
54	INFORMATION SYSTEM SECURITY PROGRAM-ISSP .....	0	2,000	0	2,000
55	COMMUNICATIONS SECURITY (COMSEC) .....	0	88,337	0	88,337

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
56	DEFENSIVE CYBER OPERATIONS .....	0	51,343			0	51,343
57	INSIDER THREAT PROGRAM—UNIT ACTIVITY MONITO .....	0	330			0	330
58	PERSISTENT CYBER TRAINING ENVIRONMENT .....	0	3,000			0	3,000
	<b>COMM—LONG HAUL COMMUNICATIONS</b> .....						
59	BASE SUPPORT COMMUNICATIONS .....	0	34,434			0	34,434
	<b>COMM—BASE COMMUNICATIONS</b> .....						
60	INFORMATION SYSTEMS .....	0	95,558			0	95,558
61	EMERGENCY MANAGEMENT MODERNIZATION PROGRAM .....	0	4,736			0	4,736
62	HOME STATION MISSION COMMAND CENTERS (HSMCC) .....	0	24,479			0	24,479
63	INSTALLATION INFO INFRASTRUCTURE MOD PROGRAM .....	0	216,433			0	216,433
	<b>ELECT EQUIP—TACT INT REL ACT (TIARA)</b> .....						
66	JTT/CIBS-M (MIP) .....	0	10,268			0	10,268
68	DCGS-A (MIP) .....	0	261,863			0	261,863
69	JOINT TACTICAL GROUND STATION (JTGS) (MIP) .....	0	5,434			0	5,434
70	TROJAN (MIP) .....	0	20,623			0	20,623
71	MOD OF IN-SVC EQUIP (INTEL SPT) (MIP) .....	0	45,998	0	1,800	0	47,798
	SOUTHCOM SIGINT Suite COMSAT RF .....			[0]	[1,800]		
72	CI HUMINT AUTO REPRING & COLL(CHARCS)(MIP) .....	0	296			0	296
76	ITEMS LESS THAN \$5.0M (MIP) .....	0	410			0	410
	<b>ELECT EQUIP—ELECTRONIC WARFARE (EW)</b> .....						
77	LIGHTWEIGHT COUNTER MORTAR RADAR .....	0	9,165			0	9,165
78	EW PLANNING & MANAGEMENT TOOLS (EWPMT) .....	0	5,875			0	5,875
79	AIR VIGILANCE (AV) (MIP) .....	0	8,497			0	8,497
83	CI MODERNIZATION (MIP) .....	0	486			0	486
	<b>ELECT EQUIP—TACTICAL SURV. (TAC SURV)</b> .....						
84	SENTINEL MODS .....	0	79,629			0	79,629



SEC. 4101. PROCUREMENT (In Thousands of Dollars)							
Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
117	TACTICAL DIGITAL MEDIA .....	0	4,392			0	4,392
118	ITEMS LESS THAN \$5M (SURVEYING EQUIPMENT) .....	0	1,970			0	1,970
	<b>ELECT EQUIP—SUPPORT</b>						
119	PRODUCTION BASE SUPPORT (C-E) .....	0	506			0	506
	CLASSIFIED PROGRAMS .....	0	4,501			0	4,501
	<b>CLASSIFIED PROGRAMS</b>						
	<b>CHEMICAL DEFENSIVE EQUIPMENT</b>						
121	PROTECTIVE SYSTEMS .....	0	2,314			0	2,314
122	FAMILY OF NON-LETHAL EQUIPMENT (FNLE) .....	0	7,478			0	7,478
124	CBRN DEFENSE .....	0	173,954			0	173,954
	<b>BRIDGING EQUIPMENT</b>						
125	TACTICAL BRIDGING .....	0	98,229			0	98,229
126	TACTICAL BRIDGE, FLOAT-RIBBON .....	0	64,438			0	64,438
127	COMMON BRIDGE TRANSPORTER (CBT) RECAP .....	0	79,916			0	79,916
	<b>ENGINEER (NON-CONSTRUCTION) EQUIPMENT</b>						
128	HANDHELD STANDOFF MINEFIELD DETECTION SYS-HST .....	0	8,471			0	8,471
129	GRND STANDOFF MINE DETECTN SYSM (GSTAMIDS) .....	0	29,883			0	29,883
130	AREA MINE DETECTION SYSTEM (AMDS) .....	0	11,594			0	11,594
131	HUSKY MOUNTED DETECTION SYSTEM (HMDS) .....	0	40,834			0	40,834
132	ROBOTIC COMBAT SUPPORT SYSTEM (RCSS) .....	0	4,029			0	4,029
133	EOD ROBOTICS SYSTEMS RECAPITALIZATION .....	0	14,208			0	14,208
134	ROBOTICS AND APPLIQUE SYSTEMS .....	0	31,456			0	31,456
136	REMOTE DEMOLITION SYSTEMS .....	0	1,748			0	1,748
137	< \$5M, COUNTERMINE EQUIPMENT .....	0	7,829			0	7,829
138	FAMILY OF BOATS AND MOTORS .....	0	5,806			0	5,806
	<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>						

139	HEATERS AND ECUS .....	0	9,852	0	9,852
140	SOLDIER ENHANCEMENT .....	0	1,103	0	1,103
141	PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS) .....	0	5,875	0	5,875
142	GROUND SOLDIER SYSTEM .....	0	92,487	0	92,487
143	MOBILE SOLDIER POWER .....	0	30,774	0	30,774
145	FIELD FEEDING EQUIPMENT .....	0	17,521	0	17,521
146	CARGO AERIAL DEL & PERSONNEL PARACHUTE SYSTEM .....	0	44,855	0	44,855
147	FAMILY OF ENGR COMBAT AND CONSTRUCTION SETS .....	0	17,173	0	17,173
148	ITEMS LESS THAN \$5M (ENG SPT) .....	0	2,000	0	2,000
	<b>PETROLEUM EQUIPMENT</b>				
149	QUALITY SURVEILLANCE EQUIPMENT .....	0	1,770	0	1,770
150	DISTRIBUTION SYSTEMS, PETROLEUM & WATER .....	0	39,730	0	39,730
	<b>MEDICAL EQUIPMENT</b>				
151	COMBAT SUPPORT MEDICAL .....	0	57,752	0	57,752
	<b>MAINTENANCE EQUIPMENT</b>				
152	MOBILE MAINTENANCE EQUIPMENT SYSTEMS .....	0	37,722	0	37,722
153	ITEMS LESS THAN \$5.0M (MAINT EQ) .....	0	4,985	0	4,985
	<b>CONSTRUCTION EQUIPMENT</b>				
155	SCRAPERS, EARTHMOVING .....	0	7,961	0	7,961
156	HYDRAULIC EXCAVATOR .....	0	1,355	0	1,355
158	ALL TERRAIN CRANES .....	0	13,031	0	13,031
159	HIGH MOBILITY ENGINEER EXCAVATOR (HMEE) .....	0	46,048	0	46,048
160	ENHANCED RAPID AIRFIELD CONSTRUCTION CAPAP .....	0	980	0	980
161	CONST EQUIP ESP .....	0	37,017	0	37,017
162	ITEMS LESS THAN \$5.0M (CONST EQUIP) .....	0	6,103	0	6,103
	<b>RAIL FLOAT CONTAINERIZATION EQUIPMENT</b>				
163	ARMY WATERCRAFT ESP .....	0	27,711	0	27,711
164	ITEMS LESS THAN \$5.0M (FLOAT/RAIL) .....	0	8,385	0	8,385
	<b>GENERATORS</b>				
165	GENERATORS AND ASSOCIATED EQUIP .....	0	133,772	0	133,772
166	TACTICAL ELECTRIC POWER RECAPITALIZATION .....	0	8,333	0	8,333
	<b>MATERIAL HANDLING EQUIPMENT</b>				

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
167	FAMILY OF FORKLIFTS .....	0	12,901			0	12,901
	<b>TRAINING EQUIPMENT</b>						
168	COMBAT TRAINING CENTERS SUPPORT .....	0	123,228			0	123,228
169	TRAINING DEVICES, NONSYSTEM .....	0	228,598			0	228,598
170	CLOSE COMBAT TACTICAL TRAINER .....	0	33,080			0	33,080
171	AVIATION COMBINED ARMS TACTICAL TRAINER .....	0	32,700			0	32,700
172	GAMING TECHNOLOGY IN SUPPORT OF ARMY TRAINING .....	0	25,161			0	25,161
	<b>TEST MEASURE AND DIG EQUIPMENT (TMD)</b>						
173	CALIBRATION SETS EQUIPMENT .....	0	4,270			0	4,270
174	INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE) .....	0	76,295			0	76,295
175	TEST EQUIPMENT MODERNIZATION (TEMOD) .....	0	9,806			0	9,806
	<b>OTHER SUPPORT EQUIPMENT</b>						
176	M25 STABILIZED BINOCULAR .....	0	4,368			0	4,368
177	RAPID EQUIPPING SOLDIER SUPPORT EQUIPMENT .....	0	9,879			0	9,879
178	PHYSICAL SECURITY SYSTEMS (OPA3) .....	0	54,043			0	54,043
179	BASE LEVEL COMMON EQUIPMENT .....	0	6,633			0	6,633
180	MODIFICATION OF IN-SVC EQUIPMENT (OPA-3) .....	0	49,797			0	49,797
181	PRODUCTION BASE SUPPORT (OTH) .....	0	2,301			0	2,301
182	SPECIAL EQUIPMENT FOR USER TESTING .....	0	11,608			0	11,608
183	TRACTOR YARD .....	0	4,956			0	4,956
	<b>OPAZ</b>						
184	INITIAL SPARES—C&E .....	0	9,817			0	9,817
	<b>TOTAL OTHER PROCUREMENT, ARMY</b> .....	<b>0</b>	<b>7,999,529</b>	<b>0</b>	<b>-263,200</b>	<b>0</b>	<b>7,736,329</b>

AIRCRAFT PROCUREMENT, NAVY  
COMBAT AIRCRAFT

1	F/A-18E/F (FIGHTER) HORNET .....	24	1,937,553		24	1,937,553
2	F/A-18E/F (FIGHTER) HORNET AP .....	0	58,799		0	58,799
3	JOINT STRIKE FIGHTER CV .....	9	1,144,958	-1	8	1,023,958
	Program Realignment .....			[-1]		
4	JOINT STRIKE FIGHTER CV AP .....	0	140,010		0	140,010
5	JSF STOVL .....	20	2,312,847		20	2,312,847
6	JSF STOVL AP .....	0	228,492		0	228,492
7	CH-53K (HEAVY LIFT) .....	8	1,113,804		8	1,113,804
8	CH-53K (HEAVY LIFT) AP .....	0	161,079		0	161,079
9	V-22 (MEDIUM LIFT) .....	7	806,337		7	806,337
10	V-22 (MEDIUM LIFT) AP .....	0	36,955		0	36,955
11	H-1 UPGRADES (UH-1Y/AH-1Z) .....	25	820,755		25	820,755
14	P-8A POSEIDON .....	10	1,803,753		10	1,803,753
15	P-8A POSEIDON AP .....	0	180,000		0	180,000
16	E-2D ADV HAWKEYE .....	4	742,693		5	917,693
	UPL-1 additional Aircraft .....			1		
17	E-2D ADV HAWKEYE AP .....	0	240,734	[1]	0	240,734
71	O/A-X LIGHT ATTACK AIRCRAFT .....	0	0	0	0	100,000
	Initial procurement for light attack aircraft .....			[0]		
	<b>AIRLIFT AIRCRAFT</b>					
18	C-40A .....	2	206,000	-2	0	0
	Funded in FY18 Omnibus .....			[-2]		
	<b>OTHER AIRCRAFT</b>					
20	KC-130J .....	2	160,433		2	160,433
21	KC-130J AP .....	0	110,013		0	110,013
22	MQ-4 TRITON .....	3	568,743		3	568,743
23	MQ-4 TRITON AP .....	0	58,522		0	58,522
24	MQ-8 UAV .....	0	54,761		0	54,761
25	STUASLO UAV .....	0	14,866		0	14,866
26	VH-92A EXECUTIVE HELO .....	6	649,015		6	649,015
72	UAV .....	0	0	0	0	100,000
	Procurement of UAV .....			[0]		

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>MODIFICATION OF AIRCRAFT</b>							
27	AEA SYSTEMS .....	0	25,277			0	25,277
28	AV-8 SERIES .....	0	58,577			0	58,577
29	ADVERSARY .....	0	14,606			0	14,606
30	F-18 SERIES .....	0	1,213,482	0	13,900	0	1,227,382
	UPL—EA-18G Advanced Modes / Cognitive EW .....			[0]	[13,900]		
31	H-53 SERIES .....	0	70,997			0	70,997
32	SH-60 SERIES .....	0	130,661			0	130,661
33	H-1 SERIES .....	0	87,143			0	87,143
34	EP-3 SERIES .....	0	3,633			0	3,633
35	P-3 SERIES .....	0	803			0	803
36	E-2 SERIES .....	0	88,780			0	88,780
37	TRAINER A/C SERIES .....	0	11,660			0	11,660
38	C-2A .....	0	11,327			0	11,327
39	C-130 SERIES .....	0	79,075			0	79,075
40	FEWSG .....	0	597			0	597
41	CARGO/TRANSPORT A/C SERIES .....	0	8,932			0	8,932
42	E-6 SERIES .....	0	181,821			0	181,821
43	EXECUTIVE HELICOPTERS SERIES .....	0	23,566			0	23,566
44	SPECIAL PROJECT AIRCRAFT .....	0	7,620			0	7,620
45	T-45 SERIES .....	0	195,475			0	195,475
46	POWER PLANT CHANGES .....	0	21,521			0	21,521
47	JPATS SERIES .....	0	27,644			0	27,644
48	AVIATION LIFE SUPPORT MODS .....	0	15,864			0	15,864
49	COMMON ECM EQUIPMENT .....	0	166,306	43	25,000	43	191,306
	UPL—F/A-18 E/F Adaptative Radar Countermeasures .....			[43]	[25,000]		

50	COMMON AVIONICS CHANGES .....	0	117,551	0	117,551
51	COMMON DEFENSIVE WEAPON SYSTEM .....	0	1,994	0	1,994
52	ID SYSTEMS .....	0	40,696	0	40,696
53	P-8 SERIES .....	0	71,251	0	71,251
54	MAGTF EW FOR AVIATION .....	0	11,590	0	11,590
55	MQ-8 SERIES .....	0	37,907	0	37,907
57	V-22 (TILT/ROTOR ACFT) OSPREY .....	0	214,820	0	214,820
58	NEXT GENERATION JAMMER (NGJ) .....	0	952	0	952
59	F-35 STOVL SERIES .....	0	36,618	0	36,618
	F-35B Modifications Increase .....			0	33,500
	F-35C Modifications Increase .....			[0]	[33,500]
60	F-35 CV SERIES .....	0	21,236	0	21,236
	F-35C Modifications Increase .....			[0]	[5,000]
61	QRC .....	0	101,499	0	101,499
62	MQ-4 SERIES .....	0	48,278	0	48,278
63	RQ-21 SERIES .....	0	6,904	0	6,904
	<b>AIRCRAFT SPARES AND REPAIR PARTS</b> .....				
64	SPARES AND REPAIR PARTS .....	0	1,792,920	0	1,792,920
	F-35B and F-35C spares quantity increase .....			0	50,000
	AIRCRAFT SUPPORT EQUIP & FACILITIES .....			[0]	[50,000]
65	COMMON GROUND EQUIPMENT .....	0	421,606	0	421,606
66	AIRCRAFT INDUSTRIAL FACILITIES .....	0	24,496	0	24,496
67	WAR CONSUMABLES .....	0	42,108	0	42,108
68	OTHER PRODUCTION CHARGES .....	0	1,444	0	1,444
69	SPECIAL SUPPORT EQUIPMENT .....	0	49,489	0	49,489
70	FIRST DESTINATION TRANSPORTATION .....	0	1,951	0	1,951
	<b>TOTAL AIRCRAFT PROCUREMENT, NAVY</b> .....	<b>120</b>	<b>19,041,799</b>	<b>41</b>	<b>175,400</b>
				<b>161</b>	<b>19,217,199</b>
	<b>WEAPONS PROCUREMENT, NAVY</b> .....				
	<b>MODIFICATION OF MISSILES</b> .....				
1	TRIDENT II MODS .....	0	1,078,750	0	1,078,750
	<b>SUPPORT EQUIPMENT &amp; FACILITIES</b> .....				
2	MISSILE INDUSTRIAL FACILITIES .....	0	6,998	0	6,998

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>STRATEGIC MISSILES</b>							
3	TOMAHAWK .....	0	98,570			0	98,570
<b>TACTICAL MISSILES</b>							
4	AMRAAM .....	140	211,058			140	211,058
5	SIDEWINDER .....	191	77,927	58	45,000	249	122,927
	Navy UPL: Increase to maximum capacity .....			[58]	[45,000]		
6	JSOW .....	0	1,330			0	1,330
7	STANDARD MISSILE .....	125	490,210			125	490,210
8	STANDARD MISSILE AP .....	0	125,683			0	125,683
9	SMALL DIAMETER BOMB II .....	750	91,272			750	91,272
10	RAM .....	120	96,221			120	96,221
11	JOINT AIR GROUND MISSILE (JAGM) .....	75	24,109			75	24,109
14	STAND OFF PRECISION GUIDED MUNITIONS (SOPGM) .....	31	11,378			31	11,378
15	AERIAL TARGETS .....	0	137,137			0	137,137
16	OTHER MISSILE SUPPORT .....	0	3,318			0	3,318
17	LRASM .....	25	81,190	10	30,000	35	111,190
	Navy UPL: Increase to maximum capacity .....			[10]	[30,000]		
18	LCS OTH MISSILE .....	8	18,156			8	18,156
<b>MODIFICATION OF MISSILES</b>							
19	ESSM .....	45	98,384			45	98,384
20	HARPOON MODS .....	0	14,840	48	12,000	48	26,840
	Navy UPL: Increase to max capacity .....			[48]	[12,000]		
21	HARM MODS .....	0	187,985	-200	-113,900	-200	74,085
	Reduce procurement due to test results .....			[-200]	[-113,900]		
<b>SUPPORT EQUIPMENT &amp; FACILITIES</b>							
23	WEAPONS INDUSTRIAL FACILITIES .....	0	2,006			0	2,006

24	FLEET SATELLITE COMM FOLLOW-ON .....	0	66,779	0	66,779	0	66,779
	<b>ORDNANCE SUPPORT EQUIPMENT</b>						
25	ORDNANCE SUPPORT EQUIPMENT .....	0	62,008	0	62,008	0	62,008
	<b>TORPEDOES AND RELATED EQUIP</b>						
26	SSTD .....	0	6,353	0	6,353	0	6,353
27	MK-48 TORPEDO .....	45	92,616	5	11,000	50	103,616
	Navy UPL: Increase to maximum capacity .....			[5]	[11,000]		
28	ASW TARGETS .....	0	12,324	0		0	12,324
	<b>MOD OF TORPEDOES AND RELATED EQUIP</b>						
29	MK-54 TORPEDO MODS .....	0	105,946	0		0	105,946
30	MK-48 TORPEDO ADCAP MODS .....	0	40,005	0		0	40,005
31	QUICKSTRIKE MINE .....	0	9,758	0		0	9,758
	<b>SUPPORT EQUIPMENT</b>						
32	TORPEDO SUPPORT EQUIPMENT .....	0	79,371	0		0	79,371
33	ASW RANGE SUPPORT .....	0	3,872	0		0	3,872
34	FIRST DESTINATION TRANSPORTATION .....	0	3,726	0		0	3,726
	<b>GUNS AND GUN MOUNTS</b>						
35	SMALL ARMS AND WEAPONS .....	0	15,067	0		0	15,067
	<b>MODIFICATION OF GUNS AND GUN MOUNTS</b>						
36	CWS MODS .....	0	63,318	0		0	63,318
37	COAST GUARD WEAPONS .....	0	40,823	0		0	40,823
38	GUN MOUNT MODS .....	0	74,618	0		0	74,618
39	LCS MODULE WEAPONS .....	90	11,350	-50	-6,000	40	5,350
	Early to need .....			[-50]	[-6,000]		
41	AIRBORNE MINE NEUTRALIZATION SYSTEMS .....	0	22,249	0		0	22,249
	<b>SPARES AND REPAIR PARTS</b>						
43	SPARES AND REPAIR PARTS .....	0	135,688	0		0	135,688
	<b>TOTAL WEAPONS PROCUREMENT, NAVY</b> .....	<b>1,645</b>	<b>3,702,393</b>	<b>-129</b>	<b>-21,900</b>	<b>1,516</b>	<b>3,680,493</b>
	<b>PROCUREMENT OF AMMO, NAVY &amp; MC</b>						
	<b>NAVY AMMUNITION</b>						

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
1	GENERAL PURPOSE BOMBS .....	0	79,871			0	79,871
2	JDAM .....	3,688	87,900			3,688	87,900
3	AIRBORNE ROCKETS, ALL TYPES .....	0	151,431			0	151,431
4	MACHINE GUN AMMUNITION .....	0	11,344			0	11,344
5	PRACTICE BOMBS .....	0	49,471			0	49,471
6	CARTRIDGES & CART ACTUATED DEVICES .....	0	56,227			0	56,227
7	AIR EXPENDABLE COUNTERMEASURES .....	0	66,382			0	66,382
8	JATOS .....	0	2,907			0	2,907
9	5 INCH/54 GUN AMMUNITION .....	0	72,657			0	72,657
10	INTERMEDIATE CALIBER GUN AMMUNITION .....	0	33,613	-1,000	-13,000	-1,000	20,613
	Alamo LRIP ahead of testing .....			[-1,000]	[-13,000]		
11	OTHER SHIP GUN AMMUNITION .....	0	42,142			0	42,142
12	SMALL ARMS & LANDING PARTY AMMO .....	0	49,888			0	49,888
13	PYROTECHNIC AND DEMOLITION .....	0	10,931			0	10,931
15	AMMUNITION LESS THAN \$5 MILLION .....	0	1,106			0	1,106
	<b>MARINE CORPS AMMUNITION</b>						
19	MORTARS .....	0	28,266			0	28,266
21	DIRECT SUPPORT MUNITIONS .....	0	63,664			0	63,664
22	INFANTRY WEAPONS AMMUNITION .....	0	59,295			0	59,295
26	COMBAT SUPPORT MUNITIONS .....	0	31,577			0	31,577
28	AMMO MODERNIZATION .....	0	15,001			0	15,001
29	ARTILLERY MUNITIONS .....	0	86,297			0	86,297
30	ITEMS LESS THAN \$5 MILLION .....	0	6,239			0	6,239
	<b>TOTAL PROCUREMENT OF AMMO, NAVY &amp; MC</b> .....	<b>3,688</b>	<b>1,006,209</b>	<b>-1,000</b>	<b>-13,000</b>	<b>2,688</b>	<b>993,209</b>

SHIPBUILDING AND CONVERSION, NAVY

1	<b>FLEET BALLISTIC MISSILE SHIPS</b>						
	OHIO REPLACEMENT SUBMARINE AP .....	0	3,005,330			0	3,005,330
	<b>OTHER WARSHIPS</b>						
2	CARRIER REPLACEMENT PROGRAM .....	0	1,598,181			0	1,598,181
4	VIRGINIA CLASS SUBMARINE .....	2	4,373,382			2	4,373,382
5	VIRGINIA CLASS SUBMARINE AP .....	0	2,796,401			0	3,046,401
	FY19-23 MYP EQO or SIB expansion .....			0	250,000		
7	CVN REFUELING OVERHAULS AP .....	0	449,597			0	449,597
8	DDG 1000 .....	0	270,965			0	0
	Cost growth transfer to Line 28 .....			[0]	[-270,965]		
9	DDG-51 .....	3	5,253,327			3	5,225,827
	Multiyear procurement contract savings .....			[0]	[-27,500]		
10	DDG-51 AP .....	0	391,928			0	641,928
	Enable greater long lead material procurement .....			[0]	[250,000]		
11	LITTORAL COMBAT SHIP .....	1	646,244			1	576,244
	Align Plans and Other costs with end of production .....			[0]	[-70,000]		
	<b>AMPHIBIOUS SHIPS</b>						
12	LPD -17 .....	0	0			0	650,000
	AP for FY2020 LPD Flight II and/or MYP EQO .....			[0]	[650,000]		
13	EXPEDITIONARY SEA BASE (ESB) .....	1	650,000			1	650,000
	<b>AUXILIARIES, CRAFT AND PRIOR YR PROGRAM COST</b>						
16	TAO FLEET OILER .....	2	977,104			2	977,104
17	TAO FLEET OILER AP .....	0	75,046			0	75,046
18	TOWING, SALVAGE, AND RESCUE SHIP (ATS) .....	1	80,517			1	80,517
20	LCU I700 .....	2	41,520			2	41,520
21	OUTFITTING .....	0	634,038			0	562,038
	Unjustified cost growth .....			[0]	[-72,000]		
22	SHIP TO SHORE CONNECTOR .....	5	325,375			5	325,375
23	SERVICE CRAFT .....	0	72,062			0	97,062
	Accelerate detail design and construction of YP-703 Flight II .....			[0]	[25,000]		
24	LCAC SLEP .....	1	23,321			1	23,321
25	USCG ICEBREAKERS .....	0	0			0	0

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
28	COMPLETION OF PY SHIPBUILDING PROGRAMS .....	0	207,099	0	270,965	0	478,064
	Cost growth transfer from Line 8 .....			[0]	[270,965]		
29	CABLE SHIP .....	0	0	1	250,000	1	250,000
	Program increase .....			[1]	[250,000]		
	<b>TOTAL SHIPBUILDING AND CONVERSION, NAVY .....</b>	<b>18</b>	<b>21,871,437</b>	<b>1</b>	<b>1,255,500</b>	<b>19</b>	<b>23,126,937</b>
	<b>OTHER PROCUREMENT, NAVY</b>						
	<b>SHIP PROPULSION EQUIPMENT</b>						
1	SURFACE POWER EQUIPMENT .....	0	19,700			0	19,700
	<b>GENERATORS</b>						
3	SURFACE COMBATANT HM&E .....	0	23,495			0	23,495
	<b>NAVIGATION EQUIPMENT</b>						
4	OTHER NAVIGATION EQUIPMENT .....	0	63,330	0	10,000	0	73,330
	Accelerate ECDIS-N 9.3, 9.4, 9.5 implementation .....			[0]	[10,000]		
	<b>OTHER SHIPBOARD EQUIPMENT</b>						
5	SUB PERISCOPE, IMAGING AND SUPT EQUIP PROG .....	0	178,421			0	178,421
6	DDG MOD .....	0	487,999			0	487,999
7	FIREFIGHTING EQUIPMENT .....	0	28,143			0	28,143
8	COMMAND AND CONTROL SWITCHBOARD .....	0	2,248			0	2,248
9	LHA/LHD MIDLIFE .....	0	37,694			0	37,694
10	POLLUTION CONTROL EQUIPMENT .....	0	20,883			0	20,883
11	SUBMARINE SUPPORT EQUIPMENT .....	0	37,155			0	37,155
12	VIRGINIA CLASS SUPPORT EQUIPMENT .....	0	66,328			0	66,328
13	LCS CLASS SUPPORT EQUIPMENT .....	0	47,241			0	47,241
14	SUBMARINE BATTERIES .....	0	27,987			0	27,987
15	LPD CLASS SUPPORT EQUIPMENT .....	0	65,033			0	65,033

16	DDG 1000 CLASS SUPPORT EQUIPMENT .....	0	89,700	0	-38,400	0	51,300
	Procurement early to need .....			[0]	[-38,400]		
17	STRATEGIC PLATFORM SUPPORT EQUIP .....	0	22,254	0		0	22,254
18	DSSP EQUIPMENT .....	0	3,629	0		0	3,629
19	CG MODERNIZATION .....	0	276,446	0		0	276,446
20	LCAC .....	0	3,709	0		0	3,709
21	UNDERWATER EOD PROGRAMS .....	0	78,807	0		0	78,807
22	ITEMS LESS THAN \$5 MILLION .....	0	126,865	0	-25,000	0	101,865
	Insufficient justification for CVN-78 in-service requirements .....			[0]	[-25,000]		
23	CHEMICAL WARFARE DETECTORS .....	0	2,966	0		0	2,966
24	SUBMARINE LIFE SUPPORT SYSTEM .....	0	11,968	0		0	11,968
	<b>REACTOR PLANT EQUIPMENT</b> .....						
25	REACTOR POWER UNITS .....	0	346,325	0		0	346,325
26	REACTOR COMPONENTS .....	0	497,063	0		0	497,063
	<b>OCEAN ENGINEERING</b> .....						
27	DIVING AND SALVAGE EQUIPMENT .....	0	10,706	0		0	10,706
	<b>SMALL BOATS</b> .....						
28	STANDARD BOATS .....	0	49,771	0		0	49,771
	<b>PRODUCTION FACILITIES EQUIPMENT</b> .....						
29	OPERATING FORCES IPE .....	0	225,181	0		0	225,181
	<b>OTHER SHIP SUPPORT</b> .....						
31	LCS COMMON MISSION MODULES EQUIPMENT .....	0	46,732	0		0	46,732
32	LCS MCM MISSION MODULES .....	0	124,147	0		0	152,063
	Transfer Cobra trainer from Line 53 .....			0	27,916		
	Transfer Knifefish and UISS trainers from Line 52 .....			[0]	[8,616]		
33	LCS ASW MISSION MODULES .....	0	57,294	0		0	39,294
	Excess procurement ahead of satisfactory testing .....			[0]	[-18,000]		
34	LCS SUW MISSION MODULES .....	0	26,006	0		0	14,506
	Excess procurement ahead of satisfactory testing .....			[0]	[-18,000]		
35	LCS IN-SERVICE MODERNIZATION .....	0	70,526	0		0	70,526
	<b>LOGISTIC SUPPORT</b> .....						
36	LSD MIDLIFE & MODERNIZATION .....	0	4,784	0		0	4,784

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>SHIP SONARS</b>							
37	SPQ-9B RADAR .....	0	20,309			0	20,309
38	AN/SQQ-89 SURF ASW COMBAT SYSTEM .....	0	115,459			0	115,459
39	SSN ACOUSTIC EQUIPMENT .....	0	318,189			0	318,189
40	UNDERSEA WARFARE SUPPORT EQUIPMENT .....	0	10,134			0	10,134
<b>ASW ELECTRONIC EQUIPMENT</b>							
41	SUBMARINE ACOUSTIC WARFARE SYSTEM .....	0	23,815			0	23,815
42	SSTD .....	0	11,277	0	-5,000	0	6,277
	AN/SLQ-32E contract delay .....			[0]	[-5,000]		
43	FIXED SURVEILLANCE SYSTEM .....	0	237,780			0	237,780
44	SURTASS .....	0	57,872			0	57,872
<b>ELECTRONIC WARFARE EQUIPMENT</b>							
45	AN/SLQ-32 .....	0	420,344			0	420,344
<b>RECONNAISSANCE EQUIPMENT</b>							
46	SHIPBOARD IW EXPLOIT .....	0	220,883			0	220,883
47	AUTOMATED IDENTIFICATION SYSTEM (AIS) .....	0	4,028			0	4,028
<b>OTHER SHIP ELECTRONIC EQUIPMENT</b>							
48	COOPERATIVE ENGAGEMENT CAPABILITY .....	0	44,173	0	-6,000	0	38,173
	Common Array Block antenna program delay .....			[0]	[-6,000]		
49	NAVAL TACTICAL COMMAND SUPPORT SYSTEM (NTCSS) .....	0	10,991			0	10,991
50	ATDLS .....	0	34,526			0	34,526
51	NAVY COMMAND AND CONTROL SYSTEM (NCCS) .....	0	3,769			0	3,769
52	MINESWEEPING SYSTEM REPLACEMENT .....	0	35,709	0	-19,300	0	16,409
	Transfer Knifefish and UISS trainers to Line 32 .....			[0]	[-19,300]		
53	SHALLOW WATER MCM .....	0	8,616	0	-8,616	0	0
	Transfer Cobra trainer to Line 32 .....			[0]	[-8,616]		

54	NAVSTAR GPS RECEIVERS (SPACE) .....	0	10,703	0	10,703
55	AMERICAN FORCES RADIO AND TV SERVICE .....	0	2,626	0	2,626
56	STRATEGIC PLATFORM SUPPORT EQUIP .....	0	9,467	0	9,467
	<b>AVIATION ELECTRONIC EQUIPMENT</b>				
57	ASHORE ATC EQUIPMENT .....	0	70,849	0	70,849
58	AFLOAT ATC EQUIPMENT .....	0	47,890	0	47,890
59	ID SYSTEMS .....	0	26,163	0	26,163
60	JOINT PRECISION APPROACH AND LANDING SYSTEM ( .....	0	38,094	0	38,094
61	NAVAL MISSION PLANNING SYSTEMS .....	0	11,966	0	11,966
	<b>OTHER SHORE ELECTRONIC EQUIPMENT</b>				
62	TACTICAL/MOBILE C4I SYSTEMS .....	0	42,010	0	42,010
63	DCGS-N .....	0	12,896	0	12,896
64	GAMES .....	0	423,027	0	423,027
65	RADIAC .....	0	8,175	0	8,175
66	GAMES-INTELL .....	0	54,465	0	54,465
67	GPETE .....	0	5,985	0	5,985
68	MASF .....	0	5,413	0	5,413
69	INTEG COMBAT SYSTEM TEST FACILITY .....	0	6,251	0	6,251
70	EMI CONTROL INSTRUMENTATION .....	0	4,183	0	4,183
71	ITEMS LESS THAN \$5 MILLION .....	0	148,350	0	142,950
	NGSSR installation funding early to need .....			0	-5,400
				[0]	[-5,400]
	<b>SHIPBOARD COMMUNICATIONS</b>				
72	SHIPBOARD TACTICAL COMMUNICATIONS .....	0	45,450	0	45,450
73	SHIP COMMUNICATIONS AUTOMATION .....	0	105,087	0	105,087
74	COMMUNICATIONS ITEMS UNDER \$5M .....	0	41,123	0	41,123
	<b>SUBMARINE COMMUNICATIONS</b>				
75	SUBMARINE BROADCAST SUPPORT .....	0	30,897	0	30,897
76	SUBMARINE COMMUNICATION EQUIPMENT .....	0	78,580	0	78,580
	<b>SATELLITE COMMUNICATIONS</b>				
77	SATELLITE COMMUNICATIONS SYSTEMS .....	0	41,205	0	41,205
78	NAVY MULTIBAND TERMINAL (NMT) .....	0	113,885	0	113,885
	<b>SHORE COMMUNICATIONS</b>				

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
79	JOINT COMMUNICATIONS SUPPORT ELEMENT (JCSE) .....	0	4,292			0	4,292
	<b>CRYPTOGRAPHIC EQUIPMENT</b>						
80	INFO SYSTEMS SECURITY PROGRAM (ISSP) .....	0	153,526			0	153,526
81	MIO INTEL EXPLOITATION TEAM .....	0	951			0	951
	<b>CRYPTOLOGIC EQUIPMENT</b>						
82	CRYPTOLOGIC COMMUNICATIONS EQUIP .....	0	14,209	0	2,800	0	17,009
	SOUTHCOM CCO Sensor (2 suites) .....			[0]	[2,800]		
	<b>OTHER ELECTRONIC SUPPORT</b>						
86	COAST GUARD EQUIPMENT .....	0	40,713			0	40,713
	<b>SONOBUOYS</b>						
88	SONOBUOYS—ALL TYPES .....	0	177,891	0	36,000	0	213,891
	Navy UPL .....			[0]	[36,000]		
	<b>AIRCRAFT SUPPORT EQUIPMENT</b>						
89	WEAPONS RANGE SUPPORT EQUIPMENT .....	0	93,864			0	93,864
90	AIRCRAFT SUPPORT EQUIPMENT .....	0	111,724			0	111,724
91	ADVANCED ARRESTING GEAR (AAG) .....	0	11,054			0	11,054
92	METEOROLOGICAL EQUIPMENT .....	0	21,072			0	21,072
93	DCRS/DPL .....	0	656			0	656
94	AIRBORNE MINE COUNTERMEASURES .....	0	11,299			0	11,299
95	LAMPS EQUIPMENT .....	0	594			0	594
96	AVIATION SUPPORT EQUIPMENT .....	0	39,374			0	39,374
97	UMCS-UNMAN CARRIER AVIATION(UCA)MISSION CNTRL .....	0	35,405			0	35,405
	<b>SHIP GUN SYSTEM EQUIPMENT</b>						
98	SHIP GUN SYSTEMS EQUIPMENT .....	0	5,337			0	5,337
	<b>SHIP MISSILE SYSTEMS EQUIPMENT</b>						
99	SHIP MISSILE SUPPORT EQUIPMENT .....	0	213,090			0	213,090

100	TOMAHAWK SUPPORT EQUIPMENT .....	0	92,890	0	92,890
	<b>FBM SUPPORT EQUIPMENT</b>				
101	STRATEGIC MISSILE SYSTEMS EQUIP .....	0	271,817	0	271,817
	<b>ASW SUPPORT EQUIPMENT</b>				
102	SSN COMBAT CONTROL SYSTEMS .....	0	129,501	0	129,501
103	ASW SUPPORT EQUIPMENT .....	0	19,436	0	19,436
	<b>OTHER ORDNANCE SUPPORT EQUIPMENT</b>				
104	EXPLOSIVE ORDNANCE DISPOSAL EQUIP .....	0	14,258	0	14,258
105	ITEMS LESS THAN \$5 MILLION .....	0	5,378	0	5,378
	<b>OTHER EXPENDABLE ORDNANCE</b>				
106	SUBMARINE TRAINING DEVICE MODS .....	0	65,543	0	65,543
107	SURFACE TRAINING EQUIPMENT .....	0	230,425	0	230,425
	<b>CIVIL ENGINEERING SUPPORT EQUIPMENT</b>				
108	PASSENGER CARRYING VEHICLES .....	0	4,867	0	4,867
109	GENERAL PURPOSE TRUCKS .....	0	2,674	0	2,674
110	CONSTRUCTION & MAINTENANCE EQUIP .....	0	20,994	0	20,994
111	FIRE FIGHTING EQUIPMENT .....	0	17,189	0	17,189
112	TACTICAL VEHICLES .....	0	19,916	0	19,916
113	AMPHIBIOUS EQUIPMENT .....	0	7,400	0	7,400
114	POLLUTION CONTROL EQUIPMENT .....	0	2,713	0	2,713
115	ITEMS UNDER \$5 MILLION .....	0	35,540	0	35,540
116	PHYSICAL SECURITY VEHICLES .....	0	1,155	0	1,155
	<b>SUPPLY SUPPORT EQUIPMENT</b>				
117	SUPPLY EQUIPMENT .....	0	18,786	0	18,786
118	FIRST DESTINATION TRANSPORTATION .....	0	5,375	0	5,375
119	SPECIAL PURPOSE SUPPLY SYSTEMS .....	0	580,371	0	580,371
	<b>TRAINING DEVICES</b>				
120	TRAINING SUPPORT EQUIPMENT .....	0	3,400	0	3,400
121	TRAINING AND EDUCATION EQUIPMENT .....	0	24,283	0	24,283
	<b>COMMAND SUPPORT EQUIPMENT</b>				
122	COMMAND SUPPORT EQUIPMENT .....	0	66,681	0	66,681
123	MEDICAL SUPPORT EQUIPMENT .....	0	3,352	0	3,352

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
125	NAVAL MIP SUPPORT EQUIPMENT .....	0	1,984			0	1,984
126	OPERATING FORCES SUPPORT EQUIPMENT .....	0	15,131			0	15,131
127	C4ISR EQUIPMENT .....	0	3,576			0	3,576
128	ENVIRONMENTAL SUPPORT EQUIPMENT .....	0	31,902			0	31,902
129	PHYSICAL SECURITY EQUIPMENT .....	0	175,436	0	20,000	0	195,436
	New Navy port waterborne security barriers increase .....			[0]	[20,000]		
130	ENTERPRISE INFORMATION TECHNOLOGY .....	0	25,393			0	25,393
	<b>OTHER</b>						
133	NEXT GENERATION ENTERPRISE SERVICE .....	0	96,269			0	96,269
	CLASSIFIED PROGRAMS .....	0	15,681			0	15,681
	<b>CLASSIFIED PROGRAMS</b>						
	<b>SPARES AND REPAIR PARTS</b>						
134	SPARES AND REPAIR PARTS .....	0	326,838			0	326,838
	<b>TOTAL OTHER PROCUREMENT, NAVY .....</b>	<b>0</b>	<b>9,414,355</b>	<b>0</b>	<b>-40,500</b>	<b>0</b>	<b>9,373,855</b>
	<b>PROCUREMENT, MARINE CORPS</b>						
	<b>TRACKED COMBAT VEHICLES</b>						
1	AAV7A1 PIP .....	0	156,249	0	-78,100	0	78,149
	Unjustified investment in a vehicle with low/limited combat utility .....			[0]	[-78,100]		
2	AMPHIBIOUS COMBAT VEHICLE 1.1 .....	30	167,478			30	167,478
3	LAV PIP .....	0	43,701			0	43,701
	<b>ARTILLERY AND OTHER WEAPONS</b>						
5	155MM LIGHTWEIGHT TOWED HOWITZER .....	0	47,158			0	47,158
6	ARTILLERY WEAPONS SYSTEM .....	0	134,246			0	134,246
7	WEAPONS AND COMBAT VEHICLES UNDER \$5 MILLION .....	0	40,687			0	40,687
	<b>OTHER SUPPORT</b>						

8	MODIFICATION KITS .....	0	22,904	0	22,904
	<b>GUIDED MISSILES</b>				
9	GROUND BASED AIR DEFENSE .....	0	18,334	0	18,334
10	ANTI-ARMOR MISSILE-JAVELIN .....	5	3,020	5	3,020
11	FAMILY ANTI-ARMOR WEAPON SYSTEMS (FOAAWS) .....	0	13,760	0	13,760
12	ANTI-ARMOR MISSILE-TOW .....	0	59,702	0	59,702
	<b>COMMAND AND CONTROL SYSTEMS</b>				
13	COMMON AVIATION COMMAND AND CONTROL SYSTEM (C) .....	0	35,467	0	35,467
	<b>REPAIR AND TEST EQUIPMENT</b>				
14	REPAIR AND TEST EQUIPMENT .....	0	46,081	0	46,081
	<b>OTHER SUPPORT (TEL)</b>				
15	MODIFICATION KITS .....	0	971	0	971
	<b>COMMAND AND CONTROL SYSTEM (NON-TEL)</b>				
16	ITEMS UNDER \$5 MILLION (COMM & ELEC) .....	0	69,203	0	69,203
17	AIR OPERATIONS C2 SYSTEMS .....	0	14,269	0	14,269
	<b>RADAR + EQUIPMENT (NON-TEL)</b>				
18	RADAR SYSTEMS .....	0	6,694	0	6,694
19	GROUND/AIR TASK ORIENTED RADAR (GATOR) .....	6	224,969	6	224,969
	<b>INTELL/COMM EQUIPMENT (NON-TEL)</b>				
21	GCSS-MC .....	0	1,187	0	1,187
22	FIRE SUPPORT SYSTEM .....	0	60,189	0	60,189
23	INTELLIGENCE SUPPORT EQUIPMENT .....	0	73,848	0	73,848
25	UNMANNED AIR SYSTEMS (INTEL) .....	0	3,848	0	3,848
26	DCGS-MC .....	0	16,081	0	16,081
	<b>OTHER SUPPORT (NON-TEL)</b>				
30	NEXT GENERATION ENTERPRISE NETWORK (NGEN) .....	0	87,120	0	87,120
31	COMMON COMPUTER RESOURCES .....	0	68,914	0	68,914
32	COMMAND POST SYSTEMS .....	0	124,838	0	99,870
	Operational limitations of NOTM .....			0	-24,968
				[0]	[-24,968]
33	RADIO SYSTEMS .....	0	279,680	0	279,680
34	COMM SWITCHING & CONTROL SYSTEMS .....	0	36,649	0	36,649
35	COMM & ELEC INFRASTRUCTURE SUPPORT .....	0	83,971	0	83,971

SEC. 4101. PROCUREMENT (In Thousands of Dollars)									
Line	Item	FY 2019 Request		Senate Change		Senate Authorized			
		Qty	Cost	Qty	Cost	Qty	Cost		
	CLASSIFIED PROGRAMS .....	0	3,626			0	3,626		
	<b>CLASSIFIED PROGRAMS</b>								
	<b>ADMINISTRATIVE VEHICLES</b>								
36	COMMERCIAL CARGO VEHICLES .....	0	25,441			0	25,441		
	<b>TACTICAL VEHICLES</b>								
37	MOTOR TRANSPORT MODIFICATIONS .....	0	11,392			0	11,392		
38	JOINT LIGHT TACTICAL VEHICLE .....	0	607,011			0	607,011		
39	FAMILY OF TACTICAL TRAILERS .....	0	2,393			0	2,393		
40	TRAILERS .....	0	6,540			0	6,540		
	<b>ENGINEER AND OTHER EQUIPMENT</b>								
41	ENVIRONMENTAL CONTROL EQUIP ASSORT .....	0	496			0	496		
42	TACTICAL FUEL SYSTEMS .....	0	54			0	54		
43	POWER EQUIPMENT ASSORTED .....	0	21,062			0	21,062		
44	AMPHIBIOUS SUPPORT EQUIPMENT .....	0	5,290			0	5,290		
45	EOD SYSTEMS .....	0	47,854			0	47,854		
	<b>MATERIALS HANDLING EQUIPMENT</b>								
46	PHYSICAL SECURITY EQUIPMENT .....	0	28,306			0	28,306		
	<b>GENERAL PROPERTY</b>								
47	FIELD MEDICAL EQUIPMENT .....	0	33,513			0	33,513		
48	TRAINING DEVICES .....	0	52,040	0	-10,408	0	41,632		
	Excess to need .....			[0]	[-10,408]				
49	FAMILY OF CONSTRUCTION EQUIPMENT .....	0	36,156			0	36,156		
50	FAMILY OF INTERNALLY TRANSPORTABLE VEH (ITV) .....	0	606			0	606		
	<b>OTHER SUPPORT</b>								
51	ITEMS LESS THAN \$5 MILLION .....	0	11,608			0	11,608		
	<b>SPARES AND REPAIR PARTS</b>								

53	SPARES AND REPAIR PARTS .....	0	25,804	0	25,804	0	25,804
	<b>TOTAL PROCUREMENT, MARINE CORPS .....</b>	<b>41</b>	<b>2,860,410</b>	<b>0</b>	<b>-113,476</b>	<b>41</b>	<b>2,746,934</b>
	<b>AIRCRAFT PROCUREMENT, AIR FORCE</b>						
	<b>TACTICAL FORCES</b>						
1	F-35 .....	48	4,261,021	-1	-67,500	47	4,193,521
	Program Realignment .....			[-1]	[-67,500]		
2	F-35 AP .....	0	406,000	0	0	0	406,000
18	O/A-X LIGHT ATTACK AIRCRAFT .....	0	0	0	350,000	0	350,000
	Procurement of O/A-X aircraft and long lead materials .....			[0]	[350,000]		
	<b>OTHER COMBAT AIRCRAFT</b>						
3	C-135B .....	2	222,176			2	222,176
	<b>TACTICAL AIRLIFT</b>						
4	KC-46A TANKER .....	15	2,559,911	-1	-247,900	14	2,312,011
	Interim contractor support .....			[0]	[-102,700]		
	Restore program accountability .....			[-1]	[-145,200]		
	<b>OTHER AIRLIFT</b>						
5	C-130J .....	0	35,858			0	35,858
6	HC-130J .....	1	129,437			1	129,437
8	MC-130J .....	6	770,201			6	770,201
9	MC-130J AP .....	0	218,000			0	218,000
	<b>HELICOPTERS</b>						
11	COMBAT RESCUE HELICOPTER .....	10	680,201			10	680,201
	<b>MISSION SUPPORT AIRCRAFT</b>						
13	CIVIL AIR PATROL A/C .....	4	2,719			4	2,719
	<b>OTHER AIRCRAFT</b>						
14	TARGET DRONES .....	48	139,053			48	139,053
15	COMPASS CALL MODS .....	1	108,113			1	108,113
17	MQ-9 .....	8	221,707	6	120,000	14	341,707
	Increase to accelerate Advanced Battle Management System .....			[6]	[120,000]		
	<b>STRATEGIC AIRCRAFT</b>						
19	B-2A .....	0	60,301			0	60,301

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		Qty	Cost	Qty	Cost	Qty	Cost
20	B-1B .....	0	51,290			0	51,290
21	B-52 .....	0	105,519	0	-4,800	0	100,719
	Air Force requested realignment .....			[0]	[-14,800]		
	LRASM certification .....			[0]	[10,000]		
	<b>TACTICAL AIRCRAFT</b>						
23	A-10 .....	0	98,720	0	65,000	0	163,720
	Additional replacement wings .....			[0]	[65,000]		
24	C-130J .....	0	10,831			0	10,831
25	F-15 .....	0	548,109			0	548,109
26	F-16 .....	0	324,323			0	324,323
27	F-22A .....	0	250,710			0	250,710
29	F-35 MODIFICATIONS .....	0	247,271	0	50,000	0	297,271
	F-35A Modifications Increase .....			[0]	[50,000]		
30	F-15 EPAW .....	0	147,685			0	147,685
31	INCREMENT 3.2B .....	0	9,007			0	9,007
33	KC-46A TANKER .....	0	8,547			0	8,547
	<b>AIRLIFT AIRCRAFT</b>						
34	C-5 .....	0	77,845			0	77,845
36	C-17A .....	0	102,121			0	102,121
37	C-21 .....	0	17,516			0	17,516
38	C-32A .....	0	4,537			0	4,537
39	C-37A .....	0	419			0	419
	<b>TRAINER AIRCRAFT</b>						
41	GLIDER MODS .....	0	137			0	137
42	T-6 .....	0	22,550			0	22,550
43	T-1 .....	0	21,952			0	21,952

44	T-38 .....	0	70,623	0	70,623
	<b>OTHER AIRCRAFT</b>				
45	U-2 MODS .....	0	48,774	0	48,774
46	KC-10A (ATCA) .....	0	11,104	0	11,104
47	C-12 .....	0	4,900	0	4,900
48	VC-25A MOD .....	0	36,938	0	36,938
49	C-40 .....	0	251	0	251
50	C-130 .....	0	22,094	0	22,094
	T56 Series 3.5 Engine Enhancement packages	0		0	74,000
		[0]		[74,000]	
51	C-130J MODS .....	0	132,045	0	132,045
52	C-135 .....	0	113,076	0	113,076
53	OC-135B .....	0	5,913	0	5,913
54	COMPASS CALL MODS .....	0	49,885	0	49,885
55	COMBAT FLIGHT INSPECTION (CFIN) .....	0	499	0	499
56	RC-135 .....	0	394,532	0	394,532
57	E-3 .....	0	133,906	0	133,906
58	E-4 .....	0	67,858	0	67,858
59	E-8 .....	0	9,919	0	9,919
	Central Computer upgrade design	0		0	25,000
		[0]		[25,000]	
60	AIRBORNE WARNING AND CNTR SYS (AWACS) 40/45 .....	0	57,780	0	57,780
61	FAMILY OF BEYOND LINE-OF-SIGHT TERMINALS .....	0	14,293	0	14,293
62	H-1 .....	0	2,940	0	2,940
63	H-60 .....	0	55,466	0	55,466
64	RQ-4 MODS .....	0	23,715	0	23,715
65	HC/MC-130 MODIFICATIONS .....	0	37,754	0	37,754
66	OTHER AIRCRAFT .....	0	62,010	0	62,010
67	MQ-9 MODS .....	0	171,548	0	171,548
69	CV-22 MODS .....	0	60,416	0	60,416
	<b>AIRCRAFT SPARES AND REPAIR PARTS</b>				
70	INITIAL SPARES/REPAIR PARTS .....	0	956,408	0	956,408
	F-35A spares .....	0		0	50,000
		[0]		[50,000]	
	<b>COMMON SUPPORT EQUIPMENT</b>				

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
71	AIRCRAFT REPLACEMENT SUPPORT EQUIP .....	0	81,241			0	81,241
	<b>POST PRODUCTION SUPPORT</b>						
74	B-2A .....	0	1,763			0	1,763
75	B-2B .....	0	35,861			0	35,861
76	B-52 .....	0	12,819			0	12,819
77	C-17A .....	0	10,114			0	10,114
79	F-15 .....	0	2,545			0	2,545
81	F-16 .....	0	11,718			0	11,718
82	F-22A .....	0	14,489			0	14,489
83	OTHER AIRCRAFT .....	0	9,928			0	9,928
84	RQ-4 POST PRODUCTION CHARGES .....	0	40,641			0	40,641
	<b>INDUSTRIAL PREPAREDNESS</b>						
86	INDUSTRIAL RESPONSIVENESS .....	0	17,378			0	17,378
	<b>WAR CONSUMABLES</b>						
88	WAR CONSUMABLES .....	0	29,342			0	29,342
	<b>OTHER PRODUCTION CHARGES</b>						
89	OTHER PRODUCTION CHARGES .....	0	1,502,386			0	1,502,386
	<b>CLASSIFIED PROGRAMS</b>						
	CLASSIFIED PROGRAMS .....	0	28,278			0	28,278
	<b>CLASSIFIED PROGRAMS</b>						
	<b>TOTAL AIRCRAFT PROCUREMENT, AIR FORCE</b> .....	143	16,206,937	4	413,800	147	16,620,737
	<b>MISSILE PROCUREMENT, AIR FORCE</b>						
	<b>MISSILE REPLACEMENT EQUIPMENT—BALLISTIC</b>						
1	MISSILE REPLACEMENT EQ-BALLISTIC .....	0	36,786			0	36,786
	<b>TACTICAL</b>						
2	JOINT AIR-SURFACE STANDOFF MISSILE .....	312	430,708			312	430,708

3	LRASMO .....	12	44,185	3	10,200	15	54,385
	Restore reduction .....			[3]	[10,200]		
4	SIDEWINDER (AIM-9X) .....	256	121,253			256	121,253
5	AMRAAM .....	220	337,886			220	337,886
6	PREDATOR HELLFIRE MISSILE .....	1,338	113,765			1,338	113,765
7	SMALL DIAMETER BOMB .....	2,917	105,034			2,917	105,034
8	SMALL DIAMETER BOMB II .....	510	100,861	0	-8,000	510	92,861
	Unit price adjustment .....			[0]	[-8,000]		
	<b>INDUSTRIAL FACILITIES</b>						
9	INDUSTRIAL PREPAREDNS/POL PREVENTION .....	0	787			0	787
	<b>CLASS IV</b>						
10	ICBM FUZE MOD .....	0	15,767			0	15,767
11	ICBM FUZE MOD AP .....	0	4,100			0	4,100
12	MM III MODIFICATIONS .....	0	129,199			0	129,199
13	AGM-65D MAVERICK .....	0	288			0	288
14	AIR LAUNCH CRUISE MISSILE (ALCM) .....	0	47,632			0	47,632
	<b>MISSILE SPARES AND REPAIR PARTS</b>						
16	REPLEN SPARES/REPAIR PARTS .....	0	97,481			0	97,481
	<b>SPECIAL PROGRAMS</b>						
18	SPECIAL UPDATE PROGRAMS .....	0	188,539			0	188,539
	CLASSIFIED PROGRAMS .....	0	895,183			0	895,183
	<b>CLASSIFIED PROGRAMS</b>						
	<b>TOTAL MISSILE PROCUREMENT, AIR FORCE</b> .....	<b>5,565</b>	<b>2,669,454</b>	<b>3</b>	<b>2,200</b>	<b>5,568</b>	<b>2,671,654</b>
	<b>SPACE PROCUREMENT, AIR FORCE</b>						
	<b>SPACE PROGRAMS</b>						
1	ADVANCED EHF .....	0	29,829			0	29,829
2	AF SATELLITE COMM SYSTEM .....	0	35,400			0	35,400
3	COUNTERSPACE SYSTEMS .....	0	1,121			0	1,121
4	FAMILY OF BEYOND LINE-OF-SIGHT TERMINALS .....	0	27,867			0	27,867
5	WIDEBAND GAPPILLER SATELLITES(SPACE) .....	0	61,606			0	61,606
6	GENERAL INFORMATION TECH—SPACE .....	0	3,425			0	3,425

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
7	GPS III SPACE SEGMENT .....	0	69,386			0	69,386
8	GLOBAL POSITIONING (SPACE) .....	0	2,181			0	2,181
9	INTEG BROADCAST SERV .....	0	16,445			0	16,445
10	SPACEBORNE EQUIP (COMSEC) .....	0	31,895			0	31,895
12	MILSATCOM .....	0	11,265			0	11,265
13	EVOLVED EXPENDABLE LAUNCH CAPABILITY .....	0	709,981			0	709,981
14	EVOLVED EXPENDABLE LAUNCH VEH(SPACE) .....	5	994,555			5	994,555
15	SBIR HIGH (SPACE) .....	0	138,397			0	138,397
17	NUDET DETECTION SYSTEM .....	0	7,705			0	7,705
18	ROCKET SYSTEMS LAUNCH PROGRAM .....	0	47,609			0	47,609
19	SPACE FENCE .....	0	51,361			0	51,361
20	SPACE MODS .....	0	148,065			0	148,065
21	SPACELIFT RANGE SYSTEM SPACE .....	0	117,637			0	117,637
	<b>SPARES</b>						
22	SPARES AND REPAIR PARTS .....	0	21,812			0	21,812
	<b>TOTAL SPACE PROCUREMENT, AIR FORCE</b> .....	<b>5</b>	<b>2,527,542</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>2,527,542</b>
	<b>PROCUREMENT OF AMMUNITION, AIR FORCE</b>						
	<b>ROCKETS</b>						
1	ROCKETS .....	0	345,911			0	345,911
	<b>CARTRIDGES</b>						
2	CARTRIDGES .....	0	163,840			0	163,840
	<b>BOMBS</b>						
3	PRACTICE BOMBS .....	0	20,876			0	20,876
4	GENERAL PURPOSE BOMBS .....	0	259,308			0	259,308
5	MASSIVE ORDNANCE PENETRATOR (MOP) .....	0	38,111			0	38,111

6	JOINT DIRECT ATTACK MUNITION .....	7,899	234,198	7,899	234,198
7	B61 .....	250	109,292	250	109,292
8	B61 AP .....	0	52,731	0	52,731
	<b>OTHER ITEMS</b>				
9	CAD/PAD .....	0	51,455	0	51,455
10	EXPLOSIVE ORDNANCE DISPOSAL (EOD) .....	0	6,038	0	6,038
11	SPARES AND REPAIR PARTS .....	0	524	0	524
12	MODIFICATIONS .....	0	1,270	0	1,270
13	ITEMS LESS THAN \$5,000,000 .....	0	4,604	0	4,604
15	<b>FLARES</b>				
	FLARES .....	0	125,286	0	125,286
	<b>FUZES</b>				
16	FUZES .....	0	109,358	0	109,358
	<b>SMALL ARMS</b>				
17	SMALL ARMS .....	0	64,502	0	64,502
	<b>TOTAL PROCUREMENT OF AMMUNITION, AIR FORCE</b> .....	<b>8,149</b>	<b>1,587,304</b>	<b>8,149</b>	<b>1,587,304</b>
	<b>OTHER PROCUREMENT, AIR FORCE</b>				
	<b>PASSENGER CARRYING VEHICLES</b>				
1	PASSENGER CARRYING VEHICLES .....	0	6,949	0	6,949
	<b>CARGO AND UTILITY VEHICLES</b>				
2	MEDIUM TACTICAL VEHICLE .....	0	36,002	0	36,002
3	CAP VEHICLES .....	0	1,022	0	1,022
4	CARGO AND UTILITY VEHICLES .....	0	42,696	0	49,879
	Procurement of 7 DABs for PACOM .....	[0]		7,183	
				[7,183]	
	<b>SPECIAL PURPOSE VEHICLES</b>				
5	JOINT LIGHT TACTICAL VEHICLE .....	0	30,145	0	30,145
6	SECURITY AND TACTICAL VEHICLES .....	0	1,230	0	3,903
	Procurement of 7 DABs for PACOM .....	[0]		2,673	
				[2,673]	
7	SPECIAL PURPOSE VEHICLES .....	0	43,003	0	53,693
	Procurement of 7 DABs for PACOM .....	[0]		10,690	
				[10,690]	
	<b>FIRE FIGHTING EQUIPMENT</b>				

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
8	FIRE FIGHTING/CRASH RESCUE VEHICLES .....	0	23,328	0	8,980	0	32,308
	Procurement of 7 DABs for PACOM .....			[0]	[8,980]		
	<b>MATERIALS HANDLING EQUIPMENT</b>						
9	MATERIALS HANDLING VEHICLES .....	0	11,537	0	19,772	0	31,309
	Procurement of 7 DABs for PACOM .....			[0]	[19,772]		
	<b>BASE MAINTENANCE SUPPORT</b>						
10	RUNWAY SNOW REMOV AND CLEANING EQU .....	0	37,600	0	2,753	0	40,353
	Procurement of 7 DABs for PACOM .....			[0]	[2,753]		
11	BASE MAINTENANCE SUPPORT VEHICLES .....	0	104,923			0	104,923
	<b>COMM SECURITY EQUIPMENT(COMSEC)</b>						
12	COMSEC EQUIPMENT .....	0	114,372			0	114,372
	<b>INTELLIGENCE PROGRAMS</b>						
13	INTERNATIONAL INTEL TECH & ARCHITECTURES .....	0	8,290			0	8,290
14	INTELLIGENCE TRAINING EQUIPMENT .....	0	2,099			0	2,099
15	INTELLIGENCE COMM EQUIPMENT .....	0	37,415			0	37,415
	<b>ELECTRONICS PROGRAMS</b>						
16	AIR TRAFFIC CONTROL & LANDING SYS .....	0	57,937			0	57,937
18	BATTLE CONTROL SYSTEM—FIXED .....	0	3,012			0	3,012
19	THEATER AIR CONTROL SYS IMPROVEMEN .....	0	19,989			0	19,989
20	WEATHER OBSERVATION FORECAST .....	0	45,020			0	45,020
21	STRATEGIC COMMAND AND CONTROL .....	0	32,836			0	32,836
22	CHEYENNE MOUNTAIN COMPLEX .....	0	12,454			0	12,454
23	MISSION PLANNING SYSTEMS .....	0	14,263			0	14,263
25	INTEGRATED STRAT PLAN & ANALY NETWORK (ISPAN) .....	0	7,769			0	7,769
	<b>SPCL COMM-ELECTRONICS PROJECTS</b>						
26	GENERAL INFORMATION TECHNOLOGY .....	0	40,450			0	40,450

27	AF GLOBAL COMMAND & CONTROL SYS .....	0	6,619	0	6,619
28	MOBILITY COMMAND AND CONTROL .....	0	10,192	0	10,192
29	AIR FORCE PHYSICAL SECURITY SYSTEM .....	0	159,313	0	161,315
	Procurement of 7 DABs for PACOM .....	0		2,002	
				[0]	[2,002]
30	COMBAT TRAINING RANGES .....	0	132,675	0	132,675
31	MINIMUM ESSENTIAL EMERGENCY COMM N .....	0	140,875	0	140,875
32	WIDE AREA SURVEILLANCE (WAS) .....	0	92,104	0	92,104
33	C3 COUNTERMEASURES .....	0	45,152	0	45,152
34	GCSS-AF FOS .....	0	483	0	483
35	DEFENSE ENTERPRISE ACCOUNTING & MGT SYS .....	0	802	0	802
36	MAINTENANCE REPAIR & OVERHAUL INITIATIVE .....	0	12,207	0	12,207
37	THEATER BATTLE MGT C2 SYSTEM .....	0	7,644	0	7,644
38	AIR & SPACE OPERATIONS CENTER (AOC) .....	0	40,066	0	40,066
	<b>AIR FORCE COMMUNICATIONS</b>				
41	BASE INFORMATION TRANSPRT INFRAST (BITI) WIRED .....	0	22,357	0	22,357
42	AFNET .....	0	102,836	0	102,836
43	JOINT COMMUNICATIONS SUPPORT ELEMENT (JCSE) .....	0	3,145	0	3,145
44	USCENTCOM .....	0	13,194	0	13,194
	<b>ORGANIZATION AND BASE</b>				
45	TACTICAL C-E EQUIPMENT .....	0	161,231	0	161,231
47	RADIO EQUIPMENT .....	0	12,142	0	12,142
48	CCTV/AUDIOVISUAL EQUIPMENT .....	0	6,505	0	6,505
49	BASE COMM INFRASTRUCTURE .....	0	169,404	0	169,404
	<b>MODIFICATIONS</b>				
50	COMM ELECT MODS .....	0	10,654	0	10,654
	<b>PERSONAL SAFETY &amp; RESCUE EQUIP</b>				
51	PERSONAL SAFETY AND RESCUE EQUIPMENT .....	0	51,906	0	51,906
	<b>DEPOT PLANT+MTRLS HANDLING EQ</b>				
52	MECHANIZED MATERIAL HANDLING EQUIP .....	0	88,298	0	88,298
	<b>BASE SUPPORT EQUIPMENT</b>				
53	BASE PROCURED EQUIPMENT .....	0	17,031	0	17,031
54	ENGINEERING AND EOD EQUIPMENT .....	0	82,635	0	82,635

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
55	MOBILITY EQUIPMENT .....	0	9,549			0	9,549
56	BASE MAINTENANCE AND SUPPORT EQUIPMENT .....	0	24,005	0	24,043	0	48,048
	Procurement of 7 DABs for PACOM .....			[0]	[24,043]		
	<b>SPECIAL SUPPORT PROJECTS</b>						
58	DARP RC135 .....	0	26,262			0	26,262
59	DCGS-AF .....	0	448,290			0	448,290
61	SPECIAL UPDATE PROGRAM .....	0	913,813			0	913,813
	CLASSIFIED PROGRAMS .....	0	17,258,069			0	17,258,069
	<b>CLASSIFIED PROGRAMS</b>						
	<b>SPARES AND REPAIR PARTS</b>						
63	SPARES AND REPAIR PARTS .....	0	86,365			0	86,365
	<b>TOTAL OTHER PROCUREMENT, AIR FORCE</b> .....	<b>0</b>	<b>20,890,164</b>	<b>0</b>	<b>78,096</b>	<b>0</b>	<b>20,968,260</b>
	<b>PROCUREMENT, DEFENSE-WIDE</b>						
	<b>MAJOR EQUIPMENT, OSD</b>						
43	MAJOR EQUIPMENT, OSD .....	0	35,295			0	35,295
	<b>MAJOR EQUIPMENT, NSA</b>						
42	INFORMATION SYSTEMS SECURITY PROGRAM (ISSP) .....	0	5,403			0	5,403
	<b>MAJOR EQUIPMENT, WHS</b>						
46	MAJOR EQUIPMENT, WHS .....	0	497			0	497
	<b>MAJOR EQUIPMENT, DISA</b>						
7	INFORMATION SYSTEMS SECURITY .....	0	21,590	0	20,000	0	41,590
	Sharkseer .....			[0]	[20,000]		
8	TELEPORT PROGRAM .....	0	33,905			0	33,905
9	ITEMS LESS THAN \$5 MILLION .....	0	27,886			0	27,886
10	NET CENTRIC ENTERPRISE SERVICES (NCES) .....	0	1,017			0	1,017

11	DEFENSE INFORMATION SYSTEM NETWORK .....	0	150,674	0	150,674
13	WHITE HOUSE COMMUNICATION AGENCY .....	0	94,610	0	94,610
14	SENIOR LEADERSHIP ENTERPRISE .....	0	197,246	0	197,246
15	JOINT REGIONAL SECURITY STACKS (JRSS) .....	0	140,338	0	140,338
16	JOINT SERVICE PROVIDER .....	0	107,182	0	87,682
	General reduction .....			0	-19,500
				[0]	[-19,500]
	<b>MAJOR EQUIPMENT, DLA</b> .....				
18	MAJOR EQUIPMENT .....	0	5,225	0	5,225
	<b>MAJOR EQUIPMENT, DSS</b> .....				
21	MAJOR EQUIPMENT .....	0	1,196	0	1,196
	<b>MAJOR EQUIPMENT, DCAA</b> .....				
1	ITEMS LESS THAN \$5 MILLION .....	0	2,542	0	2,542
	<b>MAJOR EQUIPMENT, TJS</b> .....				
44	MAJOR EQUIPMENT, TJS .....	0	4,360	0	4,360
45	MAJOR EQUIPMENT, TJS—CE2TZ .....	0	904	0	904
	<b>MAJOR EQUIPMENT, MISSILE DEFENSE AGENCY</b> .....				
26	THAAD .....	82	874,068	82	874,068
27	GROUND BASED MIDCOURSE .....	14	409,000	14	409,000
28	GROUND BASED MIDCOURSE AP .....	0	115,000	0	115,000
29	AEGIS BMD .....	43	593,488	43	593,488
30	AEGIS BMD AP .....	0	115,206	0	115,206
31	BMDs AN/TPY-2 RADARS .....	0	13,185	0	13,185
32	ISRAELI PROGRAMS .....	0	80,000	0	80,000
33	SHORT RANGE BALLISTIC MISSILE DEFENSE (SRBMD) .....	0	50,000	0	50,000
34	AEGIS ASHORE PHASE III .....	0	15,000	0	15,000
35	IRON DOME .....	0	70,000	0	70,000
36	AEGIS BMD HARDWARE AND SOFTWARE .....	28	97,057	28	97,057
	<b>MAJOR EQUIPMENT, DHRA</b> .....				
3	PERSONNEL ADMINISTRATION .....	0	10,630	0	10,630
	<b>MAJOR EQUIPMENT, DEFENSE THREAT REDUCTION AGENCY</b> .....				
23	VEHICLES .....	0	207	0	207
24	OTHER MAJOR EQUIPMENT .....	0	5,592	0	5,592

SEC. 4101. PROCUREMENT  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	<b>MAJOR EQUIPMENT, DODEA</b>						
20	AUTOMATION/EDUCATIONAL SUPPORT & LOGISTICS .....	0	1,723			0	1,723
	<b>MAJOR EQUIPMENT, DCMA</b>						
2	MAJOR EQUIPMENT .....	0	3,873			0	3,873
	<b>MAJOR EQUIPMENT, DMACT</b>						
19	MAJOR EQUIPMENT .....	0	13,106			0	13,106
	CLASSIFIED PROGRAMS .....	0	589,691			0	589,691
	<b>CLASSIFIED PROGRAMS</b>						
	<b>AVIATION PROGRAMS</b>						
50	ROTARY WING UPGRADES AND SUSTAINMENT .....	0	148,351			0	148,351
51	UNMANNED ISR .....	0	57,708			0	57,708
52	NON-STANDARD AVIATION .....	0	18,731			0	18,731
53	U-28 .....	0	32,301			0	32,301
54	MH-47 CHINOOK .....	0	131,033			0	131,033
55	CV-22 MODIFICATION .....	0	32,529			0	32,529
56	MQ-9 UNMANNED AERIAL VEHICLE .....	0	24,621			0	24,621
57	PRECISION STRIKE PACKAGE .....	0	226,965			0	226,965
58	AC/MC-130J .....	0	165,813			0	165,813
59	C-130 MODIFICATIONS .....	0	80,274			0	80,274
	<b>SHIPBUILDING</b>						
60	UNDERWATER SYSTEMS .....	0	136,723			0	136,723
	<b>AMMUNITION PROGRAMS</b>						
61	ORDNANCE ITEMS <\$5M .....	0	357,742			0	357,742
	<b>OTHER PROCUREMENT PROGRAMS</b>						
62	INTELLIGENCE SYSTEMS .....	0	85,699			0	85,699
63	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	0	17,863			0	17,863

64	OTHER ITEMS <\$5M .....	0	112,117	0	112,117	0	112,117
65	COMBATANT CRAFT SYSTEMS .....	0	7,313	0	7,313	0	7,313
66	SPECIAL PROGRAMS .....	0	14,026	0	14,026	0	14,026
67	TACTICAL VEHICLES .....	0	88,608	0	88,608	0	88,608
68	WARRIOR SYSTEMS <\$5M .....	0	438,590	0	438,590	0	438,590
69	COMBAT MISSION REQUIREMENTS .....	0	19,408	0	19,408	0	19,408
70	GLOBAL VIDEO SURVEILLANCE ACTIVITIES .....	0	6,281	0	6,281	0	6,281
71	OPERATIONAL ENHANCEMENTS INTELLIGENCE .....	0	18,509	0	18,509	0	18,509
73	OPERATIONAL ENHANCEMENTS .....	0	367,433	0	367,433	0	367,433
	<b>CBDP</b>						
74	CHEMICAL BIOLOGICAL SITUATIONAL AWARENESS .....	0	166,418	0	166,418	0	166,418
75	CB PROTECTION & HAZARD MITIGATION .....	0	144,519	0	144,519	0	144,519
	<b>TOTAL PROCUREMENT, DEFENSE-WIDE .....</b>	<b>167</b>	<b>6,786,271</b>	<b>0</b>	<b>6,786,271</b>	<b>167</b>	<b>6,786,771</b>
	<b>JOINT URGENT OPERATIONAL NEEDS FUND</b>						
	<b>JOINT URGENT OPERATIONAL NEEDS FUND</b>						
1	JOINT URGENT OPERATIONAL NEEDS FUND .....	0	100,025	0	100,025	0	100,025
	<b>TOTAL JOINT URGENT OPERATIONAL NEEDS FUND .....</b>	<b>0</b>	<b>100,025</b>	<b>0</b>	<b>100,025</b>	<b>0</b>	<b>100,025</b>
	<b>TOTAL PROCUREMENT .....</b>	<b>30,077</b>	<b>130,526,043</b>	<b>-1,162</b>	<b>1,472,720</b>	<b>28,915</b>	<b>131,998,763</b>

**SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS.**

**SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>AIRCRAFT PROCUREMENT, ARMY</b>							
<b>FIXED WING</b>							
3	MQ-1 UAV .....	6	60,000	0	0	6	60,000
<b>ROTARY</b>							
11	UH-60 BLACKHAWK M MODEL (MYP) .....	1	21,246	0	0	1	21,246
14	CH-47 HELICOPTER .....	1	25,000	0	0	1	25,000
<b>MODIFICATION OF AIRCRAFT</b>							
17	MQ-1 PAYLOAD (MIP) .....	0	11,400	0	0	0	11,400
19	GRAY EAGLE MODS2 .....	0	32,000	0	0	0	32,000
20	MULTI SENSOR ABN RECON (MIP) .....	0	51,000	0	0	0	51,000
32	RQ-7 UAV MODS .....	0	50,868	0	0	0	50,868
33	UAS MODS .....	0	3,402	0	0	0	3,402
<b>GROUND SUPPORT AVIONICS</b>							
36	CMWS .....	0	84,387	0	0	0	84,387
37	COMMON INFRARED COUNTERMEASURES (CIRCUM) .....	0	24,060	0	0	0	24,060
	<b>TOTAL AIRCRAFT PROCUREMENT, ARMY .....</b>	<b>9</b>	<b>363,363</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>363,363</b>
<b>MISSILE PROCUREMENT, ARMY</b>							
<b>SURFACE-TO-AIR MISSILE SYSTEM</b>							
2	MSE MISSILE .....	61	260,000	0	0	61	260,000
<b>AIR-TO-SURFACE MISSILE SYSTEM</b>							
5	HELLFIRE SYS SUMMARY .....	2,684	255,040	0	0	2,684	255,040
<b>ANTI-TANK/ASSAULT MISSILE SYS</b>							
8	JAVELIN (AAWS-M) SYSTEM SUMMARY .....	75	31,120	0	0	75	31,120

11	GUIDED MLRS ROCKET (GMLRS) .....	7,584	624,500	0	7,584	624,500
13	HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HMARS) .....	24	171,138	0	24	171,138
14	LETHAL MINIATURE AERIAL MISSILE SYSTEM (LMAMS) .....	1,318	112,973	0	1,318	112,973
	<b>MODIFICATIONS</b>					
16	ATACMS MODS .....	0	225,580	0	0	225,580
21	MLRS MODS .....	0	122,000	0	0	122,000
	<b>TOTAL MISSILE PROCUREMENT, ARMY</b> .....	<b>11,746</b>	<b>1,802,351</b>	<b>0</b>	<b>11,746</b>	<b>1,802,351</b>
	<b>PROCUREMENT OF W&amp;TCV, ARMY</b>					
	<b>TRACKED COMBAT VEHICLES</b>					
1	BRADLEY PROGRAM .....	61	205,000	0	61	205,000
2	ARMORED MULTI PURPOSE VEHICLE (AMPV) .....	66	230,359	0	66	230,359
	<b>MODIFICATION OF TRACKED COMBAT VEHICLES</b>					
6	BRADLEY PROGRAM (MOD) .....	0	50,000	0	0	50,000
8	PALADIN INTEGRATED MANAGEMENT (PIM) .....	6	67,000	0	6	67,000
9	IMPROVED RECOVERY VEHICLE (M88A2 HERCULES) .....	12	42,354	0	12	42,354
14	M1 ABRAMS TANK (MOD) .....	0	34,000	0	0	34,000
15	ABRAMS UPGRADE PROGRAM .....	40	455,000	0	40	455,000
	<b>WEAPONS &amp; OTHER COMBAT VEHICLES</b>					
18	M240 MEDIUM MACHINE GUN (7.62MM) .....	0	126	0	0	126
22	MORTAR SYSTEMS .....	0	11,842	0	0	11,842
25	CARBINE .....	0	1,800	0	0	1,800
27	COMMON REMOTELY OPERATED WEAPONS STATION .....	0	3,378	0	0	3,378
	<b>MOD OF WEAPONS AND OTHER COMBAT VEH</b>					
32	M2 50 CAL MACHINE GUN MODS .....	0	4,920	0	0	4,920
34	M240 MEDIUM MACHINE GUN MODS .....	0	7	0	0	7
	<b>SUPPORT EQUIPMENT &amp; FACILITIES</b>					
39	ITEMS LESS THAN \$5.0M (WOCV-WTCV) .....	0	1,397	0	0	1,397
	<b>TOTAL PROCUREMENT OF W&amp;TCV, ARMY</b> .....	<b>185</b>	<b>1,107,183</b>	<b>0</b>	<b>185</b>	<b>1,107,183</b>
	<b>PROCUREMENT OF AMMUNITION, ARMY</b>					
	<b>SMALL/MEDIUM CAL AMMUNITION</b>					

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
1	CTG, 5.56MM, ALL TYPES .....	0	3,392	0	0	0	3,392
2	CTG, 7.62MM, ALL TYPES .....	0	40	0	0	0	40
3	CTG, HANDGUN, ALL TYPES .....	0	17	0	0	0	17
4	CTG, .50 CAL, ALL TYPES .....	0	189	0	0	0	189
5	CTG, 20MM, ALL TYPES .....	0	1,605	0	0	0	1,605
7	CTG, 30MM, ALL TYPES .....	0	25,000	0	0	0	25,000
	<b>MORTAR AMMUNITION</b>						
9	60MM MORTAR, ALL TYPES .....	0	218	0	0	0	218
10	81MM MORTAR, ALL TYPES .....	0	484	0	0	0	484
	<b>ARTILLERY AMMUNITION</b>						
14	ARTILLERY PROJECTILE, 155MM, ALL TYPES .....	0	79,400	0	0	0	79,400
15	PROJ 155MM EXTENDED RANGE M982 .....	973	72,985	0	0	973	72,985
16	ARTILLERY PROPELLANTS, FUZES AND PRIMERS, ALL .....	0	63,900	0	0	0	63,900
	<b>ROCKETS</b>						
18	SHOULDER LAUNCHED MUNITIONS, ALL TYPES .....	0	22,242	0	0	0	22,242
19	ROCKET, HYDRA 70, ALL TYPES .....	0	39,974	0	0	0	39,974
	<b>OTHER AMMUNITION</b>						
21	DEMOLITION MUNITIONS, ALL TYPES .....	0	5	0	0	0	5
22	GRENADES, ALL TYPES .....	0	8	0	0	0	8
	<b>MISCELLANEOUS</b>						
27	ITEMS LESS THAN \$5 MILLION (AMMO) .....	0	66	0	0	0	66
	<b>TOTAL PROCUREMENT OF AMMUNITION, ARMY</b> .....	<b>973</b>	<b>309,525</b>	<b>0</b>	<b>0</b>	<b>973</b>	<b>309,525</b>
	<b>OTHER PROCUREMENT, ARMY</b>						
	<b>TACTICAL VEHICLES</b>						
2	SEMITRAILERS, FLATBED: .....	0	8,000	0	0	0	8,000

3	AMBULANCE, 4 LITTER, 5/4 TON, 4X4 .....	0	20,770	0	0	20,770
10	FAMILY OF HEAVY TACTICAL VEHICLES (FHTV) .....	596	115,400	0	596	115,400
12	HVY EXPANDED MOBILE TACTICAL TRUCK EXT SERV .....	0	6,682	0	0	6,682
13	TACTICAL WHEELED VEHICLE PROTECTION KITS .....	0	50,000	0	0	50,000
14	MODIFICATION OF IN SVC EQUIP .....	0	186,377	0	0	186,377
	<b>COMM—SATELLITE COMMUNICATIONS</b>					
28	TRANSPORTABLE TACTICAL COMMAND COMMUNICATIONS .....	0	7,100	0	0	7,100
	<b>COMM—COMBAT COMMUNICATIONS</b>					
37	JOINT TACTICAL RADIO SYSTEM .....	0	1,560	0	0	1,560
42	TRACTOR RIDE .....	0	13,190	0	0	13,190
45	TACTICAL COMMUNICATIONS AND PROTECTIVE SYSTEM .....	0	9,549	0	0	9,549
47	COTS COMMUNICATIONS EQUIPMENT .....	0	22,000	0	0	22,000
	<b>COMM—INTELLIGENCE COMM</b>					
50	CI AUTOMATION ARCHITECTURE (MIP) .....	0	9,800	0	0	9,800
	<b>INFORMATION SECURITY</b>					
55	COMMUNICATIONS SECURITY (COMSEC) .....	0	3	0	0	3
	<b>COMM—LONG HAUL COMMUNICATIONS</b>					
59	BASE SUPPORT COMMUNICATIONS .....	0	690	0	0	690
	<b>COMM—BASE COMMUNICATIONS</b>					
60	INFORMATION SYSTEMS .....	0	8,750	0	0	8,750
63	INSTALLATION INFO INFRASTRUCTURE MOD PROGRAM .....	0	60,337	0	0	60,337
	<b>ELECT EQUIP—TACT INT REL ACT (TIARA)</b>					
68	DCGS-A (MIP) .....	0	37,806	0	0	37,806
70	TROJAN (MIP) .....	0	6,926	0	0	6,926
71	MOD OF IN-SVC EQUIP (INTEL SPT) (MIP) .....	0	2,011	0	0	2,011
75	BIOMETRIC TACTICAL COLLECTION DEVICES (MIP) .....	0	5,370	0	0	5,370
	<b>ELECT EQUIP—ELECTRONIC WARFARE (EW)</b>					
80	CREW .....	0	42,651	0	0	42,651
81	FAMILY OF PERSISTENT SURVEILLANCE CAP. (MIP) .....	0	20,050	0	0	20,050
82	COUNTERINTELLIGENCE/SECURITY COUNTERMEASURES .....	0	12,974	0	0	12,974
	<b>ELECT EQUIP—TACTICAL SURV. (TAC SURV)</b>					
85	NIGHT VISION DEVICES .....	0	463	0	0	463

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS  
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Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
86	LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM .....	0	2,861	0	0	0	2,861
87	SMALL TACTICAL OPTICAL RIFLE MOUNTED MLRF .....	0	60	0	0	0	60
88	RADIATION MONITORING SYSTEMS .....	0	11	0	0	0	11
90	INDIRECT FIRE PROTECTION FAMILY OF SYSTEMS .....	0	251,062	0	0	0	251,062
91	FAMILY OF WEAPON SIGHTS (FWS) .....	0	525	0	0	0	525
94	JOINT BATTLE COMMAND—PLATFORM (JBC-P) .....	0	26,146	0	0	0	26,146
96	MOD OF IN-SVC EQUIP (LLDR) .....	0	4,050	0	0	0	4,050
97	COMPUTER BALLISTICS: LHMBC XM32 .....	0	960	0	0	0	960
98	MORTAR FIRE CONTROL SYSTEM .....	0	7,660	0	0	0	7,660
99	COUNTERFIRE RADARS .....	0	165,200	0	0	0	165,200
	<b>ELECT EQUIP—AUTOMATION</b>						
112	AUTOMATED DATA PROCESSING EQUIP .....	0	28,475	0	0	0	28,475
	<b>CHEMICAL DEFENSIVE EQUIPMENT</b>						
121	PROTECTIVE SYSTEMS .....	0	27	0	0	0	27
122	FAMILY OF NON-LETHAL EQUIPMENT (FNLE) .....	0	20,200	0	0	0	20,200
123	BASE DEFENSE SYSTEMS (BDS) .....	0	39,200	0	0	0	39,200
124	CBRN DEFENSE .....	0	2,317	0	0	0	2,317
	<b>ENGINEER (NON-CONSTRUCTION) EQUIPMENT</b>						
129	GRND STANDOFF MINE DETECTN SYSM (GSTAMIDS) .....	0	16,000	0	0	0	16,000
130	AREA MINE DETECTION SYSTEM (AMDS) .....	0	1	0	0	0	1
132	ROBOTIC COMBAT SUPPORT SYSTEM (RCSS) .....	0	4,850	0	0	0	4,850
136	REMOTE DEMOLITION SYSTEMS .....	0	1	0	0	0	1
	<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>						
139	HEATERS AND ECIUS .....	0	270	0	0	0	270
141	PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS) .....	0	4,300	0	0	0	4,300
142	GROUND SOLDIER SYSTEM .....	0	1,725	0	0	0	1,725

144	FORCE PROVIDER .....	0	55,800	0	0	55,800	0	0	0	55,800
145	FIELD FEEDING EQUIPMENT .....	0	1,035	0	0	1,035	0	0	0	1,035
146	CARGO AERIAL DEL & PERSONNEL PARACHUTE SYSTEM .....	0	1,980	0	0	1,980	0	0	0	1,980
	<b>MEDICAL EQUIPMENT</b>									
151	COMBAT SUPPORT MEDICAL .....	0	17,527	0	0	17,527	0	0	0	17,527
	<b>MAINTENANCE EQUIPMENT</b>									
153	ITEMS LESS THAN \$5.0M (MAINT EQ) .....	0	268	0	0	268	0	0	0	268
	<b>CONSTRUCTION EQUIPMENT</b>									
159	HIGH MOBILITY ENGINEER EXCAVATOR (HMEE) .....	0	25,700	0	0	25,700	0	0	0	25,700
	<b>GENERATORS</b>									
165	GENERATORS AND ASSOCIATED EQUIP .....	0	569	0	0	569	0	0	0	569
	<b>TEST MEASURE AND DIG EQUIPMENT (TMD)</b>									
174	INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE) .....	0	9,495	0	0	9,495	0	0	0	9,495
	<b>OTHER SUPPORT EQUIPMENT</b>									
176	M25 STABILIZED BINOCULAR .....	0	33	0	0	33	0	0	0	33
177	RAPID EQUIPPING SOLDIER SUPPORT EQUIPMENT .....	0	18,000	0	0	18,000	0	0	0	18,000
178	PHYSICAL SECURITY SYSTEMS (OPAS) .....	0	6,000	0	0	6,000	0	0	0	6,000
179	BASE LEVEL COMMON EQUIPMENT .....	0	2,080	0	0	2,080	0	0	0	2,080
180	MODIFICATION OF IN-SVC EQUIPMENT (OPA-3) .....	0	19,200	0	0	19,200	0	0	0	19,200
	<b>TOTAL OTHER PROCUREMENT, ARMY</b> .....	<b>596</b>	<b>1,382,047</b>	<b>0</b>	<b>0</b>	<b>1,382,047</b>	<b>0</b>	<b>0</b>	<b>596</b>	<b>1,382,047</b>
	<b>AIRCRAFT PROCUREMENT, NAVY</b>									
	<b>OTHER AIRCRAFT</b>									
25	STUASLO UAV .....	0	35,065	0	0	35,065	0	0	0	35,065
	<b>MODIFICATION OF AIRCRAFT</b>									
32	SH-60 SERIES .....	0	4,858	0	0	4,858	0	0	0	4,858
34	EP-3 SERIES .....	0	5,380	0	0	5,380	0	0	0	5,380
44	SPECIAL PROJECT AIRCRAFT .....	0	2,165	0	0	2,165	0	0	0	2,165
49	COMMON ECM EQUIPMENT .....	0	9,820	0	0	9,820	0	0	0	9,820
51	COMMON DEFENSIVE WEAPON SYSTEM .....	0	3,206	0	0	3,206	0	0	0	3,206
61	QRC .....	0	2,410	0	0	2,410	0	0	0	2,410
63	RQ-21 SERIES .....	0	17,215	0	0	17,215	0	0	0	17,215

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS  
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Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	<b>TOTAL AIRCRAFT PROCUREMENT, NAVY</b> .....	0	80,119	0	0	0	80,119
	<b>WEAPONS PROCUREMENT, NAVY</b>						
	<b>STRATEGIC MISSILES</b>						
3	TOMAHAWK .....	0		69	82,800	69	82,800
	Buy-back Tomahawk .....			[69]	[82,800]		
	<b>TACTICAL MISSILES</b>						
4	AMRAAM .....	1	1,183	0		1	1,183
5	SIDEWINDER .....	1	381	0		1	381
12	HELLFIRE .....	23	1,530	0		23	1,530
15	AERIAL TARGETS .....	0	6,500	0		0	6,500
	<b>GUNS AND GUN MOUNTS</b>						
35	SMALL ARMS AND WEAPONS .....	0	1,540	0		0	1,540
	<b>MODIFICATION OF GUNS AND GUN MOUNTS</b>						
38	GUN MOUNT MODS .....	0	3,000	0		0	3,000
	<b>TOTAL WEAPONS PROCUREMENT, NAVY</b> .....	25	14,134	69	82,800	94	96,934
	<b>PROCUREMENT OF AMMO, NAVY &amp; MC</b>						
	<b>NAVY AMMUNITION</b>						
1	GENERAL PURPOSE BOMBS .....	0	62,530	0		0	62,530
2	JDAM .....	3,906	93,019	0		3,906	93,019
3	AIRBORNE ROCKETS, ALL TYPES .....	0	2,163	0		0	2,163
4	MACHINE GUN AMMUNITION .....	0	5,000	0		0	5,000
6	CARTRIDGES & CART ACTUATED DEVICES .....	0	5,334	0		0	5,334
7	AIR EXPENDABLE COUNTERMEASURES .....	0	36,580	0		0	36,580
8	JATOS .....	0	747	0		0	747

11	OTHER SHIP GUN AMMUNITION .....	0	2,538	0	0	2,538
13	PYROTECHNIC AND DEMOLITION .....	0	1,807	0	0	1,807
15	AMMUNITION LESS THAN \$5 MILLION .....	0	2,229	0	-2,000	229
	Excess balances .....	[0]			[-2,000]	
	<b>MARINE CORPS AMMUNITION</b>					
19	MORTARS .....	0	2,018	0	0	2,018
21	DIRECT SUPPORT MUNITIONS .....	0	632	0	0	632
22	INFANTRY WEAPONS AMMUNITION .....	0	779	0	0	779
26	COMBAT SUPPORT MUNITIONS .....	0	164	0	0	164
29	ARTILLERY MUNITIONS .....	0	31,001	0	0	31,001
	<b>TOTAL PROCUREMENT OF AMMO, NAVY &amp; MC</b> .....	<b>3,906</b>	<b>246,541</b>	<b>0</b>	<b>-2,000</b>	<b>244,541</b>
	<b>OTHER PROCUREMENT, NAVY</b>					
	<b>OTHER SHIPBOARD EQUIPMENT</b>					
21	UNDERWATER EOD PROGRAMS .....	0	9,200	0	0	9,200
	<b>SMALL BOATS</b>					
28	STANDARD BOATS .....	0	19,060	0	0	19,060
	<b>ASW ELECTRONIC EQUIPMENT</b>					
43	FIXED SURVEILLANCE SYSTEM .....	0	56,950	0	0	56,950
	<b>SATELLITE COMMUNICATIONS</b>					
77	SATELLITE COMMUNICATIONS SYSTEMS .....	0	3,200	0	0	3,200
	<b>CRYPTOLOGIC EQUIPMENT</b>					
82	CRYPTOLOGIC COMMUNICATIONS EQUIP .....	0	2,000	0	0	2,000
	<b>SONOBUOYS</b>					
88	SONOBUOYS—ALL TYPES .....	0	21,156	0	0	21,156
	<b>OTHER ORDNANCE SUPPORT EQUIPMENT</b>					
104	EXPLOSIVE ORDNANCE DISPOSAL EQUIP .....	0	33,580	0	0	33,580
	<b>CIVIL ENGINEERING SUPPORT EQUIPMENT</b>					
108	PASSENGER CARRYING VEHICLES .....	0	170	0	0	170
109	GENERAL PURPOSE TRUCKS .....	0	400	0	0	400
111	FIRE FIGHTING EQUIPMENT .....	0	770	0	0	770
112	TACTICAL VEHICLES .....	0	7,298	0	0	7,298

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		Qty	Cost	Qty	Cost	Qty	Cost
	<b>SUPPLY SUPPORT EQUIPMENT</b>						
118	FIRST DESTINATION TRANSPORTATION .....	0	500	0	0	0	500
	<b>COMMAND SUPPORT EQUIPMENT</b>						
123	MEDICAL SUPPORT EQUIPMENT .....	0	6,500	0	0	0	6,500
128	ENVIRONMENTAL SUPPORT EQUIPMENT .....	0	2,200	0	0	0	2,200
129	PHYSICAL SECURITY EQUIPMENT .....	0	19,389	0	0	0	19,389
	CLASSIFIED PROGRAMS .....	0	4,800	0	0	0	4,800
	<b>CLASSIFIED PROGRAMS</b>						
	<b>TOTAL OTHER PROCUREMENT, NAVY .....</b>	<b>0</b>	<b>187,173</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>187,173</b>
	<b>PROCUREMENT, MARINE CORPS</b>						
	<b>INTELL/COMM EQUIPMENT (NON-TEL)</b>						
22	FIRE SUPPORT SYSTEM .....	0	5,583	0	0	0	5,583
	<b>TACTICAL VEHICLES</b>						
37	MOTOR TRANSPORT MODIFICATIONS .....	0	44,440	0	0	0	44,440
	<b>ENGINEER AND OTHER EQUIPMENT</b>						
45	EOD SYSTEMS .....	0	8,000	0	0	0	8,000
	<b>TOTAL PROCUREMENT, MARINE CORPS .....</b>	<b>0</b>	<b>58,023</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>58,023</b>
	<b>AIRCRAFT PROCUREMENT, AIR FORCE</b>						
	<b>OTHER AIRLIFT</b>						
6	HC-130J .....	1	100,000	0	0	1	100,000
	<b>OTHER AIRCRAFT</b>						
17	MQ-9 .....	21	339,740	0	0	21	339,740
18	RQ-20B PUMA .....	0	13,500	0	0	0	13,500
	<b>STRATEGIC AIRCRAFT</b>						

20	B-1B .....	0	4,000	0	0	4,000
22	LARGE AIRCRAFT INFRARED COUNTERMEASURES .....	0	149,778	0	0	149,778
	<b>TACTICAL AIRCRAFT</b>					
23	A-10 .....	0	10,350	0	0	10,350
	<b>OTHER AIRCRAFT</b>					
45	U-2 MODS .....	0	7,900	0	0	7,900
54	COMPASS CALL MODS .....	0	36,400	0	0	36,400
59	E-8 .....	0	13,000	0	0	13,000
63	H-60 .....	0	40,560	0	0	40,560
65	HC/MC-130 MODIFICATIONS .....	0	87,900	0	0	87,900
66	OTHER AIRCRAFT .....	0	53,731	0	0	53,731
68	MQ-9 UAS PAYLOADS .....	0	16,000	0	0	16,000
	<b>AIRCRAFT SPARES AND REPAIR PARTS</b>					
70	INITIAL SPARES/REPAIR PARTS .....	0	91,500	0	0	91,500
	<b>COMMON SUPPORT EQUIPMENT</b>					
71	AIRCRAFT REPLACEMENT SUPPORT EQUIP .....	0	32,529	0	0	32,529
72	OTHER PRODUCTION CHARGES .....	0	22,000	0	0	22,000
	<b>TOTAL AIRCRAFT PROCUREMENT, AIR FORCE</b> .....	<b>22</b>	<b>1,018,888</b>	<b>0</b>	<b>0</b>	<b>1,018,888</b>
	<b>MISSILE PROCUREMENT, AIR FORCE</b>					
	<b>TACTICAL</b>					
2	JOINT AIR-SURFACE STANDOFF MISSILE .....	48	61,600	19	22,800	84,400
	Buy-back JASSM-ER .....			[19]	[22,800]	
5	AMRAAM .....	2	2,600	0	0	2,600
6	PREDATOR HELLFIRE MISSILE .....	3,000	255,000	0	3,000	255,000
7	SMALL DIAMETER BOMB .....	3,909	140,724	0	3,909	140,724
	<b>CLASS IV</b>					
13	AGM-65D MAVERICK .....	0	33,602	0	0	33,602
	<b>TOTAL MISSILE PROCUREMENT, AIR FORCE</b> .....	<b>6,959</b>	<b>493,326</b>	<b>19</b>	<b>22,800</b>	<b>516,326</b>
	<b>PROCUREMENT OF AMMUNITION, AIR FORCE</b>					
	<b>CARTRIDGES</b>					

**SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
2	CARTRIDGES .....	0	29,587	0	0	0	29,587
	<b>BOMBS</b>						
4	GENERAL PURPOSE BOMBS .....	0	551,862	0	0	0	551,862
6	JOINT DIRECT ATTACK MUNITION .....	28,101	738,451	0	0	28,101	738,451
	<b>FLARES</b>						
15	FLARES .....	0	12,116	0	0	0	12,116
	<b>FUZES</b>						
16	FUZES .....	0	81,000	0	0	0	81,000
	<b>SMALL ARMS</b>						
17	SMALL ARMS .....	0	8,500	0	0	0	8,500
	<b>TOTAL PROCUREMENT OF AMMUNITION, AIR FORCE</b> .....	<b>28,101</b>	<b>1,421,516</b>	<b>0</b>	<b>0</b>	<b>28,101</b>	<b>1,421,516</b>
	<b>OTHER PROCUREMENT, AIR FORCE</b>						
	<b>PASSENGER CARRYING VEHICLES</b>						
1	PASSENGER CARRYING VEHICLES .....	0	9,680	0	0	0	9,680
	<b>CARGO AND UTILITY VEHICLES</b>						
2	MEDIUM TACTICAL VEHICLE .....	0	9,680	0	0	0	9,680
4	CARGO AND UTILITY VEHICLES .....	0	19,680	0	0	0	19,680
	<b>SPECIAL PURPOSE VEHICLES</b>						
6	SECURITY AND TACTICAL VEHICLES .....	0	24,880	0	0	0	24,880
7	SPECIAL PURPOSE VEHICLES .....	0	34,680	0	0	0	34,680
	<b>FIRE FIGHTING EQUIPMENT</b>						
8	FIRE FIGHTING/CRASH RESCUE VEHICLES .....	0	9,736	0	0	0	9,736
	<b>MATERIALS HANDLING EQUIPMENT</b>						
9	MATERIALS HANDLING VEHICLES .....	0	24,680	0	0	0	24,680
	<b>BASE MAINTENANCE SUPPORT</b>						

488

10	RUNWAY SNOW REMOV AND CLEANING EQU .....	0	9,680	0	0	9,680	0	9,680
11	BASE MAINTENANCE SUPPORT VEHICLES .....	0	9,680	0	0	9,680	0	9,680
	<b>INTELLIGENCE PROGRAMS</b>							
15	INTELLIGENCE COMM EQUIPMENT .....	0	6,156	0	0	6,156	0	6,156
	<b>ELECTRONICS PROGRAMS</b>							
16	AIR TRAFFIC CONTROL & LANDING SYS .....	0	56,884	0	0	56,884	0	56,884
	<b>SPCL COMM-ELECTRONICS PROJECTS</b>							
29	AIR FORCE PHYSICAL SECURITY SYSTEM .....	0	46,236	0	0	46,236	0	46,236
37	THEATER BATTLE MGT C2 SYSTEM .....	0	2,500	0	0	2,500	0	2,500
	<b>ORGANIZATION AND BASE</b>							
45	TACTICAL C-E EQUIPMENT .....	0	27,911	0	0	27,911	0	27,911
	<b>PERSONAL SAFETY &amp; RESCUE EQUIP</b>							
51	PERSONAL SAFETY AND RESCUE EQUIPMENT .....	0	13,600	0	0	13,600	0	13,600
	<b>BASE SUPPORT EQUIPMENT</b>							
53	BASE PROCURED EQUIPMENT .....	0	28,800	0	0	28,800	0	28,800
54	ENGINEERING AND EOD EQUIPMENT .....	0	53,500	0	0	53,500	0	53,500
55	MOBILITY EQUIPMENT .....	0	78,562	0	0	78,562	0	78,562
56	BASE MAINTENANCE AND SUPPORT EQUIPMENT .....	0	28,055	0	0	28,055	0	28,055
	<b>SPECIAL SUPPORT PROJECTS</b>							
59	DCGS-AF .....	0	2,000	0	0	2,000	0	2,000
	<b>CLASSIFIED PROGRAMS</b>							
	CLASSIFIED PROGRAMS .....	0	3,229,364	0	0	3,229,364	0	3,229,364
	<b>CLASSIFIED PROGRAMS</b>							
	<b>TOTAL OTHER PROCUREMENT, AIR FORCE</b> .....	<b>0</b>	<b>3,725,944</b>	<b>0</b>	<b>0</b>	<b>3,725,944</b>	<b>0</b>	<b>3,725,944</b>
	<b>PROCUREMENT, DEFENSE-WIDE</b>							
	<b>MAJOR EQUIPMENT, DISA</b>							
8	TELEPORT PROGRAM .....	0	3,800	0	0	3,800	0	3,800
17	DEFENSE INFORMATION SYSTEMS NETWORK .....	0	12,000	0	0	12,000	0	12,000
	<b>MAJOR EQUIPMENT, DEFENSE THREAT REDUCTION AGENCY</b>							
25	COUNTER IED & IMPROVISED THREAT TECHNOLOGIES .....	0	5,534	0	0	5,534	0	5,534
	<b>CLASSIFIED PROGRAMS</b>							
	CLASSIFIED PROGRAMS .....	0	41,559	0	0	41,559	0	41,559
	<b>CLASSIFIED PROGRAMS</b>							

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS  
(In Thousands of Dollars)

Line	Item	FY 2019 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
<b>AVIATION PROGRAMS</b>							
47	MANNED ISR .....	0	5,000	0	0	0	5,000
48	MC-12 .....	0	5,000	0	0	0	5,000
49	MH-60 BLACKHAWK .....	0	27,600	0	0	0	27,600
51	UNMANNED ISR .....	0	17,000	0	0	0	17,000
52	NON-STANDARD AVIATION .....	0	13,000	0	0	0	13,000
53	U-28 .....	0	51,722	0	0	0	51,722
54	MH-47 CHINOOK .....	0	36,500	0	0	0	36,500
<b>AMMUNITION PROGRAMS</b>							
61	ORDNANCE ITEMS <\$5M .....	0	100,850	0	0	0	100,850
<b>OTHER PROCUREMENT PROGRAMS</b>							
62	INTELLIGENCE SYSTEMS .....	0	16,500	0	0	0	16,500
64	OTHER ITEMS <\$5M .....	0	7,700	0	0	0	7,700
67	TACTICAL VEHICLES .....	0	59,891	0	0	0	59,891
68	WARRIOR SYSTEMS <\$5M .....	0	21,135	0	0	0	21,135
69	COMBAT MISSION REQUIREMENTS .....	0	10,000	0	0	0	10,000
71	OPERATIONAL ENHANCEMENTS INTELLIGENCE .....	0	10,805	0	0	0	10,805
73	OPERATIONAL ENHANCEMENTS .....	0	126,539	0	0	0	126,539
	<b>TOTAL PROCUREMENT, DEFENSE-WIDE .....</b>	<b>0</b>	<b>572,135</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>572,135</b>
	<b>TOTAL PROCUREMENT .....</b>	<b>52,522</b>	<b>12,782,468</b>	<b>88</b>	<b>103,600</b>	<b>52,610</b>	<b>12,886,068</b>

**TITLE XLII—RESEARCH, DEVELOPMENT, TEST,  
AND EVALUATION**

# TITLE XLII—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

## SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION.

### SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, ARMY</b>					
<b>BASIC RESEARCH</b>					
1	0601101A	IN-HOUSE LABORATORY INDEPENDENT RESEARCH .....	11,585		11,585
2	0601102A	DEFENSE RESEARCH SCIENCES .....	276,912	12,500	289,412
		Basic research increase .....		[7,500]	
		Quantum information sciences .....		[5,000]	
3	0601103A	UNIVERSITY RESEARCH INITIATIVES .....	65,283		65,283
4	0601104A	UNIVERSITY AND INDUSTRY RESEARCH CENTERS .....	92,115	5,000	97,115
		Basic research program increase .....		[5,000]	
		<b>SUBTOTAL BASIC RESEARCH .....</b>	<b>445,895</b>	<b>17,500</b>	<b>463,395</b>
<b>APPLIED RESEARCH</b>					
5	0602105A	MATERIALS TECHNOLOGY .....	28,600		28,600
6	0602120A	SENSORS AND ELECTRONIC SURVIVABILITY .....	32,366	5,000	37,366
		Program increase .....		[5,000]	
7	0602122A	TRACTOR HIP .....	8,674		8,674
8	0602126A	TRACTOR JACK .....	400		400
9	0602211A	AVIATION TECHNOLOGY .....	64,847	-5,000	59,847
		Mission systems / engine and drives coordination .....		[ -5,000]	

10	0602720A	ELECTRONIC WARFARE TECHNOLOGY .....	25,571		25,571
11	0602303A	MISSILE TECHNOLOGY .....	50,183		50,183
12	0602307A	ADVANCED WEAPONS TECHNOLOGY .....	29,502		29,502
13	0602308A	ADVANCED CONCEPTS AND SIMULATION .....	28,500	10,000	38,500
		Pilot for cyber modeling and simulation .....		[10,000]	
14	0602601A	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY .....	70,450		70,450
15	0602618A	BALLISTICS TECHNOLOGY .....	75,541		75,541
16	0602622A	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY .....	5,032		5,032
17	0602623A	JOINT SERVICE SMALL ARMS PROGRAM .....	12,394		12,394
18	0602624A	WEAPONS AND MUNITIONS TECHNOLOGY .....	40,444	2,500	42,944
		Advanced warheads technology .....		[2,500]	
19	0602705A	ELECTRONICS AND ELECTRONIC DEVICES .....	58,283		58,283
20	0602709A	NIGHT VISION TECHNOLOGY .....	29,582		29,582
21	0602712A	COUNTERMINE SYSTEMS .....	21,244		21,244
22	0602716A	HUMAN FACTORS ENGINEERING TECHNOLOGY .....	24,131	2,500	26,631
		General program increase .....		[2,500]	
23	0602720A	ENVIRONMENTAL QUALITY TECHNOLOGY .....	13,242		13,242
24	0602782A	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY .....	55,003	-5,000	50,003
		General Program Reduction .....		[-5,000]	
25	0602783A	COMPUTER AND SOFTWARE TECHNOLOGY .....	14,958		14,958
26	0602784A	MILITARY ENGINEERING TECHNOLOGY .....	78,159		78,159
27	0602785A	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY .....	21,862		21,862
28	0602786A	WARFIGHTER TECHNOLOGY .....	40,566		40,566
29	0602787A	MEDICAL TECHNOLOGY .....	90,075		90,075
		<b>SUBTOTAL APPLIED RESEARCH .....</b>	<b>919,609</b>	<b>10,000</b>	<b>929,609</b>
<b>ADVANCED TECHNOLOGY DEVELOPMENT</b>					
30	0603001A	WARFIGHTER ADVANCED TECHNOLOGY .....	39,338		39,338
31	0603002A	MEDICAL ADVANCED TECHNOLOGY .....	62,496		62,496
32	0603003A	AVIATION ADVANCED TECHNOLOGY .....	124,958	-5,000	119,958
		Platform design and structures systems .....		[-5,000]	
33	0603004A	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY .....	102,686	20,000	122,686

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
34	0603005A	Accelerate ERCA gun .....		[20,000]	
		COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY .....	119,739	72,500	192,239
		Modular scalable powertrain .....		[2,500]	
		Prototype Next Generation Combat Vehicle .....		[70,000]	
35	0603006A	SPACE APPLICATION ADVANCED TECHNOLOGY .....	13,000		13,000
36	0603007A	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY .....	8,044		8,044
37	0603009A	TRATOR HIKE .....	22,631		22,631
38	0603015A	NEXT GENERATION TRAINING & SIMULATION SYSTEMS .....	25,682		25,682
40	0603125A	COMBATING TERRORISM—TECHNOLOGY DEVELOPMENT .....	3,762		3,762
41	0603130A	TRACTOR MAIL .....	4,896		4,896
42	0603131A	TRACTOR EGGS .....	6,041		6,041
43	0603270A	ELECTRONIC WARFARE TECHNOLOGY .....	31,491		31,491
44	0603313A	MISSILE AND ROCKET ADVANCED TECHNOLOGY .....	61,132		61,132
45	0603322A	TRACTOR CAGE .....	16,845		16,845
46	0603461A	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM .....	183,322	5,000	188,322
		Program increase .....		[5,000]	
47	0603606A	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY .....	11,104		11,104
48	0603607A	JOINT SERVICE SMALL ARMS PROGRAM .....	5,885		5,885
49	0603710A	NIGHT VISION ADVANCED TECHNOLOGY .....	61,376		61,376
50	0603728A	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS .....	9,136		9,136
51	0603734A	MILITARY ENGINEERING ADVANCED TECHNOLOGY .....	25,864		38,864
		Minor MILCON .....		[8,000]	
		Program increase .....		[5,000]	
52	0603772A	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY .....	34,883	2,500	37,383
		PNT research .....		[2,500]	
53	0603794A	C3 ADVANCED TECHNOLOGY .....	52,387	-5,000	47,387
		General program decrease .....		[-5,000]	



SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
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Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
		Army Cyber Center of Excellence .....		[5,000]	
82	1206120A	ASSURED POSITIONING, NAVIGATION AND TIMING (PNT) .....	146,300		146,300
83	1206308A	ARMY SPACE SYSTEMS INTEGRATION .....	38,319		38,319
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES .....</b>	<b>1,329,393</b>	<b>57,000</b>	<b>1,386,393</b>
		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>			
84	0604201A	AIRCRAFT AVIONICS .....	32,293		32,293
85	0604270A	ELECTRONIC WARFARE DEVELOPMENT .....	78,699		78,699
88	0604328A	TRACTOR CAGE .....	17,050		17,050
89	0604601A	INFANTRY SUPPORT WEAPONS .....	83,155		83,155
90	0604604A	MEDIUM TACTICAL VEHICLES .....	3,704		3,704
91	0604611A	JAVELIN .....	10,623		10,623
92	0604622A	FAMILY OF HEAVY TACTICAL VEHICLES .....	11,950		11,950
93	0604633A	AIR TRAFFIC CONTROL .....	12,347		12,347
95	0604642A	LIGHT TACTICAL WHEELED VEHICLES .....	8,212		8,212
96	0604645A	ARMORED SYSTEMS MODERNIZATION (ASM)—ENG DEV .....	393,613	-75,000	318,613
		Mobile Protected Firepower decrease .....		[-75,000]	
97	0604710A	NIGHT VISION SYSTEMS—ENG DEV .....	139,614		139,614
98	0604713A	COMBAT FEEDING, CLOTHING, AND EQUIPMENT .....	4,507		4,507
99	0604715A	NON-SYSTEM TRAINING DEVICES—ENG DEV .....	49,436		49,436
100	0604741A	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE—ENG DEV .....	95,172		95,172
101	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT .....	22,628		22,628
102	0604746A	AUTOMATIC TEST EQUIPMENT DEVELOPMENT .....	13,297		13,297
103	0604760A	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS)—ENG DEV .....	9,145		9,145
104	0604768A	BRILLIANT ANTI-ARMOR SUBMUNITION (BAT) .....	9,894		9,894
105	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT) CORE .....	21,964		21,964
106	0604798A	BRIGADE ANALYSIS, INTEGRATION AND EVALUATION .....	49,288		49,288

107	0604802A	WEAPONS AND MUNITIONS—ENG DEV .....	183,100
108	0604804A	LOGISTICS AND ENGINEER EQUIPMENT—ENG DEV .....	79,706
109	0604805A	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS—ENG DEV .....	15,970
110	0604807A	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT—ENG DEV .....	44,542
111	0604808A	LANDMINE WARFARE/BARRIER—ENG DEV .....	50,817
112	0604818A	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE .....	178,693
113	0604820A	RADAR DEVELOPMENT .....	39,338
114	0604822A	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEB5) .....	37,851
115	0604823A	FIREFINDER .....	45,473
116	0604827A	SOLDIER SYSTEMS—WARRIOR DEMVAL .....	10,395
117	0604852A	SUITE OF SURVIVABILITY ENHANCEMENT SYSTEMS—EMD .....	78,204
		Suite of Vehicle Protection Systems .....	9,000
		ARTILLERY SYSTEMS—EMD .....	[9,000]
118	0604854A	ARTILLERY SYSTEMS—EMD .....	1,781
119	0605013A	INFORMATION TECHNOLOGY DEVELOPMENT .....	113,758
120	0605018A	INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (PPS-A) .....	166,603
121	0605028A	ARMORED MULTI-PURPOSE VEHICLE (AMPV) .....	118,239
122	0605029A	INTEGRATED GROUND SECURITY SURVEILLANCE RESPONSE CAPABILITY (IGSSR-C) .....	3,211
123	0605030A	JOINT TACTICAL NETWORK CENTER (JTNC) .....	15,889
124	0605031A	JOINT TACTICAL NETWORK (JTN) .....	41,972
125	0605032A	TRACTOR TIRE .....	41,166
126	0605033A	GROUND-BASED OPERATIONAL SURVEILLANCE SYSTEM—EXPEDITIONARY (GBOSS-E) .....	5,175
127	0605034A	TACTICAL SECURITY SYSTEM (TSS) .....	4,496
128	0605035A	COMMON INFRARED COUNTERMEASURES (CIRCM) .....	51,178
129	0605036A	COMBATING WEAPONS OF MASS DESTRUCTION (CWMD) .....	11,311
131	0605038A	NUCLEAR BIOLOGICAL CHEMICAL RECONNAISSANCE VEHICLE (NBCRV) SENSOR SUITE .....	17,154
132	0605041A	DEFENSIVE CYBER TOOL DEVELOPMENT .....	36,626
133	0605042A	TACTICAL NETWORK RADIO SYSTEMS (LOW-TIER) .....	3,829
134	0605047A	CONTRACT WRITING SYSTEM .....	41,928
		Duplication concern in contract writing systems .....	-41,928
135	0605049A	MISSILE WARNING SYSTEM MODERNIZATION (MWSM) .....	28,276
136	0605051A	AIRCRAFT SURVIVABILITY DEVELOPMENT .....	21,965
137	0605052A	INDIRECT FIRE PROTECTION CAPABILITY INC 2—BLOCK 1 .....	157,710

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
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Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
138	0605053A	GROUND ROBOTICS .....	86,167		86,167
139	0605054A	EMERGING TECHNOLOGY INITIATIVES .....	42,866		42,866
140	0605380A	AMF JOINT TACTICAL RADIO SYSTEM (JTRS) .....	15,984		15,984
141	0605450A	JOINT AIR-TO-GROUND MISSILE (JAGM) .....	11,773		11,773
142	0605457A	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD) .....	277,607		277,607
143	0605766A	NATIONAL CAPABILITIES INTEGRATION (MIP) .....	12,340		12,340
144	0605812A	JOINT LIGHT TACTICAL VEHICLE (LTV) ENGINEERING AND MANUFACTURING DEVELOPMENT PH ..	2,686		2,686
145	0605830A	AVIATION GROUND SUPPORT EQUIPMENT .....	2,706		2,706
147	0303032A	TROJAN—RH12 .....	4,521		4,521
150	0304270A	ELECTRONIC WARFARE DEVELOPMENT .....	8,922		8,922
151	1205117A	TRACTOR BEARS .....	23,170		23,170
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION .....</b>	<b>3,192,689</b>	<b>-107,928</b>	<b>3,084,761</b>
<b>RD&amp;E MANAGEMENT SUPPORT</b>					
152	0604256A	THREAT SIMULATOR DEVELOPMENT .....	12,835		12,835
153	0604258A	TARGET SYSTEMS DEVELOPMENT .....	12,135		12,135
154	0604759A	MAJOR T&E INVESTMENT .....	82,996	25,000	107,996
		Program increase .....		[25,000]	
155	0605103A	RAND ARROYO CENTER .....	19,821		19,821
156	0605301A	ARMY KWAJALEIN ATOLL .....	246,574		246,574
157	0605326A	CONCEPTS EXPERIMENTATION PROGRAM .....	30,430		30,430
159	0605601A	ARMY TEST RANGES AND FACILITIES .....	305,759	15,000	320,759
		Increase to help manage directed energy workloads .....		[15,000]	
160	0605602A	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS .....	62,379		62,379
161	0605604A	SURVIVABILITY/LETHALITY ANALYSIS .....	40,496		40,496
162	0605606A	AIRCRAFT CERTIFICATION .....	3,941		3,941
163	0605702A	METEOROLOGICAL SUPPORT TO RD&E ACTIVITIES .....	9,767		9,767

164	0605706A	MATERIEL SYSTEMS ANALYSIS .....	21,226	21,226
165	0605709A	EXPLOITATION OF FOREIGN ITEMS .....	13,026	13,026
166	0605712A	SUPPORT OF OPERATIONAL TESTING .....	52,718	52,718
167	0605716A	ARMY EVALUATION CENTER .....	57,049	57,049
168	0605718A	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG .....	2,801	2,801
169	0605801A	PROGRAMMABLE ACTIVITIES .....	60,942	60,942
170	0605803A	TECHNICAL INFORMATION ACTIVITIES .....	29,050	29,050
171	0605805A	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY .....	42,332	42,332
172	0605857A	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT .....	3,216	3,216
173	0605898A	ARMY DIRECT REPORT HEADQUARTERS—R&D - IMHA .....	54,145	54,145
174	0606001A	MILITARY GROUND-BASED CREW TECHNOLOGY .....	4,896	4,896
175	0606002A	RONALD REAGAN BALLISTIC MISSILE DEFENSE TEST SITE .....	63,011	63,011
176	0606003A	COUNTERINTEL AND HUMAN INTEL MODERNIZATION .....	2,636	2,636
177	0606942A	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	88,300	88,300
		<b>SUBTOTAL RDT&amp;E MANAGEMENT SUPPORT .....</b>	<b>1,362,481</b>	<b>1,362,481</b>

40,000

499

181	9999999999	CLASSIFIED PROGRAMS .....	5,955	5,955
182	0603778A	<b>OPERATIONAL SYSTEMS DEVELOPMENT</b> .....	8,886	8,886
183	0603813A	MLRS PRODUCT IMPROVEMENT PROGRAM .....	4,067	4,067
184	0605024A	TRACTOR PULL .....	4,254	4,254
185	0607131A	ANTI-TAMPER TECHNOLOGY SUPPORT .....	16,022	16,022
186	0607133A	WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS .....	4,577	4,577
187	0607134A	TRACTOR SMOKE .....	186,475	186,475
188	0607135A	LONG RANGE PRECISION FIRES (LRPF) .....	31,049	31,049
189	0607136A	APACHE PRODUCT IMPROVEMENT PROGRAM .....	35,240	35,240
190	0607137A	BLACKHAWK PRODUCT IMPROVEMENT PROGRAM .....	157,822	157,822
191	0607138A	CHINOOK PRODUCT IMPROVEMENT PROGRAM .....	4,189	4,189
192	0607139A	FIXED WING PRODUCT IMPROVEMENT PROGRAM .....	192,637	192,637
193	0607140A	IMPROVED TURBINE ENGINE PROGRAM .....	60,860	60,860
194	0607142A	AVIATION ROCKET SYSTEM PRODUCT IMPROVEMENT AND DEVELOPMENT .....	52,019	52,019
195	0607143A	UNMANNED AIRCRAFT SYSTEM UNIVERSAL PRODUCTS .....	2,400	2,400
196	0607665A	FAMILY OF BIOMETRICS .....		

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
197	0607865A	PATRIOT PRODUCT IMPROVEMENT .....	65,369		65,369
198	0202429A	AEROSTAT JOINT PROJECT—COCOM EXERCISE .....	1		1
199	0203728A	JOINT AUTOMATED DEEP OPERATION COORDINATION SYSTEM (JADOCs) .....	30,954		30,954
200	0203735A	COMBAT VEHICLE IMPROVEMENT PROGRAMS .....	411,927		411,927
202	0203743A	1.55MM SELF-PROPELLED HOWITZER IMPROVEMENTS .....	40,676		40,676
203	0203744A	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS .....	17,706		17,706
204	0203752A	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM .....	146		146
205	0203758A	DIGITIZATION .....	6,316		6,316
206	0203801A	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM .....	1,643		1,643
207	0203802A	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS .....	4,947		4,947
208	0203808A	TRACTOR CARD .....	34,050		34,050
210	0205410A	MATERIALS HANDLING EQUIPMENT .....	1,464		1,464
211	0205412A	ENVIRONMENTAL QUALITY TECHNOLOGY—OPERATIONAL SYSTEM DEV .....	249		249
212	0205456A	LOWER TIER AIR AND MISSILE DEFENSE (AMD) SYSTEM .....	79,283		79,283
213	0205778A	GUIDED MULTIPLE-LAUNCH ROCKET SYSTEM (GMLRS) .....	154,102		154,102
216	0303028A	SECURITY AND INTELLIGENCE ACTIVITIES .....	12,280		12,280
217	0303140A	INFORMATION SYSTEMS SECURITY PROGRAM .....	68,533		68,533
218	0303141A	GLOBAL COMBAT SUPPORT SYSTEM .....	68,619		68,619
220	0303150A	WMCCS/GLOBAL COMMAND AND CONTROL SYSTEM .....	2,034		2,034
223	0305172A	COMBINED ADVANCED APPLICATIONS .....	1,500		1,500
224	0305179A	INTEGRATED BROADCAST SERVICE (IBS) .....	450		450
225	0305204A	TACTICAL UNMANNED AERIAL VEHICLES .....	6,000		6,000
226	0305206A	AIRBORNE RECONNAISSANCE SYSTEMS .....	12,416		12,416
227	0305208A	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	38,667		38,667
229	0305232A	RQ-11 UAV .....	6,180		6,180
230	0305233A	RQ-7 UAV .....	12,863		12,863
231	0307665A	BIOMETRICS ENABLED INTELLIGENCE .....	4,310		4,310

233	0708045A	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES .....	53,958		53,958
234	1203142A	SATCOM GROUND ENVIRONMENT (SPACE) .....	12,119		12,119
235	1208053A	JOINT TACTICAL GROUND SYSTEM .....	7,400		7,400
		<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>1,922,614</b>	<b>0</b>	<b>1,922,614</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, ARMY .....</b>	<b>10,159,379</b>	<b>119,572</b>	<b>10,278,951</b>
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, NAVY</b>			
		<b>BASIC RESEARCH</b>			
1	0601103N	UNIVERSITY RESEARCH INITIATIVES .....	119,433	5,000	124,433
		Basic research program increase .....		[5,000]	
2	0601152N	IN-HOUSE LABORATORY INDEPENDENT RESEARCH .....	19,237		19,237
3	0601153N	DEFENSE RESEARCH SCIENCES .....	458,708	10,000	468,708
		Basic research program increase .....		[5,000]	
		Quantum information sciences .....		[5,000]	
		<b>SUBTOTAL BASIC RESEARCH .....</b>	<b>597,378</b>	<b>15,000</b>	<b>612,378</b>
		<b>APPLIED RESEARCH</b>			
4	0602114N	POWER PROJECTION APPLIED RESEARCH .....	14,643	2,500	17,143
		Directed energy .....		[2,500]	
5	0602123N	FORCE PROTECTION APPLIED RESEARCH .....	124,049		124,049
6	0602131M	MARINE CORPS LANDING FORCE TECHNOLOGY .....	59,607		59,607
7	0602235N	COMMON PICTURE APPLIED RESEARCH .....	36,348		36,348
8	0602236N	WARFIGHTER SUSTANMENT APPLIED RESEARCH .....	56,197	-7,500	48,697
		ONR global growth .....		[-7,500]	
9	0602271N	ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH .....	83,800		83,800
10	0602435N	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH .....	42,998		42,998
11	0602651M	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH .....	6,349		6,349
12	0602747N	UNDERSEA WARFARE APPLIED RESEARCH .....	58,049	20,000	78,049
		General program increase .....		[20,000]	
13	0602750N	FUTURE NAVAL CAPABILITIES APPLIED RESEARCH .....	147,771		147,771
14	0602782N	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH .....	37,545		37,545

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
15	0602792N	INNOVATIVE NAVAL PROTOTYPES (INP) APPLIED RESEARCH .....	159,697	5,000	164,697
		Directed energy and electronic warfare/unmanned and autonomous systems .....		[5,000]	
16	0602861N	SCIENCE AND TECHNOLOGY MANAGEMENT—ONR FIELD ACTIVITIES .....	64,418		64,418
		<b>SUBTOTAL APPLIED RESEARCH</b> .....	<b>891,471</b>	<b>20,000</b>	<b>911,471</b>
		<b>ADVANCED TECHNOLOGY DEVELOPMENT</b>			
19	0603123N	FORCE PROTECTION ADVANCED TECHNOLOGY .....	2,423		2,423
21	0603640M	USMC ADVANCED TECHNOLOGY DEMONSTRATION (ATD) .....	150,245	-10,000	140,245
		Unjustified growth .....		[-10,000]	
22	0603651M	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT .....	13,313		13,313
23	0603671N	NAVY ADVANCED TECHNOLOGY DEVELOPMENT (ATD) .....	131,502		131,502
24	0603673N	FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEVELOPMENT .....	232,996		232,996
25	0603680N	MANUFACTURING TECHNOLOGY PROGRAM .....	58,657		58,657
30	0603801N	INNOVATIVE NAVAL PROTOTYPES (INP) ADVANCED TECHNOLOGY DEVELOPMENT .....	161,859	4,500	166,359
		DE & EW/unmanned and autonomous systems .....		[4,500]	
		<b>SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT</b> .....	<b>750,995</b>	<b>-5,500</b>	<b>745,495</b>
		<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>			
31	0603207N	AIR/OCEAN TACTICAL APPLICATIONS .....	29,747		29,747
32	0603216N	AVIATION SURVIVABILITY .....	7,050		7,050
33	0603251N	AIRCRAFT SYSTEMS .....	793		793
34	0603254N	ASW SYSTEMS DEVELOPMENT .....	7,058		7,058
35	0603261N	TACTICAL AIRBORNE RECONNAISSANCE .....	3,540		3,540
36	0603382N	ADVANCED COMBAT SYSTEMS TECHNOLOGY .....	59,741	2,500	62,241
		Locust/HCIUS/INP Transition .....		[2,500]	
37	0603502N	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES .....	62,727	-26,000	36,727
		Barracuda EDMs ahead of PDR and CDR .....		[-26,000]	

38	0603506N	SURFACE SHIP TORPEDO DEFENSE .....	8,570		8,570
39	0603512N	CARRIER SYSTEMS DEVELOPMENT .....	5,440		5,440
40	0603525N	PILOT FISH .....	162,222		162,222
41	0603527N	RETRACT LARCH .....	11,745		11,745
42	0603536N	RETRACT JUNIPER .....	114,265		114,265
43	0603542N	RADIOLOGICAL CONTROL .....	740		740
44	0603553N	SURFACE ASW .....	1,122		1,122
45	0603561N	ADVANCED SUBMARINE SYSTEM DEVELOPMENT .....	109,086	3,500	112,586
		Advanced submarine propulsion development .....		[3,500]	
46	0603562N	SUBMARINE TACTICAL WARFARE SYSTEMS .....	9,374		9,374
47	0603563N	SHIP CONCEPT ADVANCED DESIGN .....	89,419	18,000	107,419
		CHAMP acceleration .....		[18,000]	
48	0603564N	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES .....	13,348		13,348
49	0603570N	ADVANCED NUCLEAR POWER SYSTEMS .....	256,137		256,137
50	0603573N	ADVANCED SURFACE MACHINERY SYSTEMS .....	22,109		22,109
51	0603576N	CHALK EAGLE .....	29,744		29,744
52	0603581N	LITTORAL COMBAT SHIP (LCS) .....	27,997		27,997
53	0603582N	COMBAT SYSTEM INTEGRATION .....	16,351		16,351
54	0603595N	OHIO REPLACEMENT .....	514,846		514,846
55	0603596N	LCS MISSION MODULES .....	103,633	29,400	133,033
		Project 2552: Align with deferred LCS-6 SSMM test .....		[-5,000]	
		Transfer from PE 64028N .....		[16,700]	
		Transfer from PE 64126N .....		[10,100]	
		Transfer from PE 64127N .....		[7,600]	
56	0603597N	AUTOMATED TEST AND ANALYSIS .....	7,931		7,931
57	0603599N	FRIGATE DEVELOPMENT .....	134,772		134,772
58	0603609N	CONVENTIONAL MUNITIONS .....	9,307		9,307
60	0603635M	MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM .....	1,828		1,828
61	0603654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT .....	43,148		43,148
62	0603713N	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT .....	5,915		5,915
63	0603721N	ENVIRONMENTAL PROTECTION .....	19,811		19,811
64	0603724N	NAVY ENERGY PROGRAM .....	25,656		25,656

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
65	0603725N	FACILITIES IMPROVEMENT .....	5,301		5,301
66	0603734N	CHALK CORAL .....	267,985		267,985
67	0603739N	NAVY LOGISTIC PRODUCTIVITY .....	4,059		4,059
68	0603746N	RETRACT MAPLE .....	377,878		377,878
69	0603748N	LINK PLUMERIA .....	381,770		381,770
70	0603751N	RETRACT ELM .....	60,535		60,535
73	0603790N	NATO RESEARCH AND DEVELOPMENT .....	9,652		9,652
74	0603795N	LAND ATTACK TECHNOLOGY .....	15,529	-15,529	
		Program delay and no GLGP EMD FYDP funding .....		[-15,529]	
75	0603851M	JOINT NON-LETHAL WEAPONS TESTING .....	27,581		27,581
76	0603860N	JOINT PRECISION APPROACH AND LANDING SYSTEMS—DEMVAL .....	101,566		101,566
77	0603925N	DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS .....	223,344		223,344
78	0604014N	F/A -18 INFRARED SEARCH AND TRACK (IRST) .....	108,700	24,000	132,700
		IRST block II risk reduction .....		[24,000]	
79	0604027N	DIGITAL WARFARE OFFICE .....	26,691		26,691
80	0604028N	SMALL AND MEDIUM UNMANNED UNDERSEA VEHICLES .....	16,717	-16,717	
		Transfer to PE 63596N .....		[-16,717]	
81	0604029N	UNMANNED UNDERSEA VEHICLE CORE TECHNOLOGIES .....	30,187		30,187
82	0604030N	RAPID PROTOTYPING, EXPERIMENTATION AND DEMONSTRATION. ....	48,796		48,796
83	0604031N	LARGE UNMANNED UNDERSEA VEHICLES .....	92,613	-21,200	71,413
		Early to need .....		[-21,200]	
84	0604112N	GERALD R. FORD CLASS NUCLEAR AIRCRAFT CARRIER (CVN 78—80) .....	58,121		58,121
86	0604126N	LITTORAL AIRBORNE MCM .....	17,622	-10,100	7,522
		Transfer to PE 63596N .....		[-10,100]	
87	0604127N	SURFACE MINE COUNTERMEASURES .....	18,154	-7,600	10,554
		Transfer to PE 63596N .....		[-7,600]	
88	0604272N	TACTICAL AIR DIRECTIONAL INFRARED COUNTERMEASURES (TADIRCM) .....	47,278		47,278

90	0604289M	NEXT GENERATION LOGISTICS .....	11,081	11,081
92	0604320M	RAPID TECHNOLOGY CAPABILITY PROTOTYPE .....	7,107	7,107
93	0604454N	LX (R) .....	5,549	5,549
94	0604536N	ADVANCED UNDERSEA PROTOTYPING .....	87,669	87,669
95	0604659N	PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM .....	132,818	132,818
96	0604707N	SPACE AND ELECTRONIC WARFARE (SEW) ARCHITECTURE/ENGINEERING SUPPORT .....	7,230	7,230
97	0604786N	OFFENSIVE ANTI-SURFACE WARFARE WEAPON DEVELOPMENT .....	143,062	143,062
99	0303354N	ASW SYSTEMS DEVELOPMENT—MIP .....	8,889	8,889
100	0304240M	ADVANCED TACTICAL UNMANNED AIRCRAFT SYSTEM .....	25,291	25,291
101	0304240N	ADVANCED TACTICAL UNMANNED AIRCRAFT SYSTEM .....	9,300	9,300
102	0304270N	ELECTRONIC WARFARE DEVELOPMENT—MIP .....	466	466
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES .....</b>	<b>4,293,713</b>	<b>-19,746</b>
				<b>4,273,967</b>

**SYSTEM DEVELOPMENT & DEMONSTRATION**

103	0603208N	TRAINING SYSTEM AIRCRAFT .....	12,798	12,798
104	0604212N	OTHER HELO DEVELOPMENT .....	32,128	32,128
105	0604214M	AV-8B AIRCRAFT—ENG DEV .....	46,363	30,163
		Lacks operational justification/need .....		-16,200
		[ -16,200 ]		
107	0604215N	STANDARDS DEVELOPMENT .....	3,771	3,771
108	0604216N	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT .....	16,611	16,611
109	0604218N	AIR/OCEAN EQUIPMENT ENGINEERING .....	17,368	17,368
110	0604221N	P-3 MODERNIZATION PROGRAM .....	2,134	2,134
111	0604230N	WARFARE SUPPORT SYSTEM .....	9,729	9,729
112	0604231N	TACTICAL COMMAND SYSTEM .....	57,688	57,688
113	0604234N	ADVANCED HAWKEYE .....	223,565	223,565
114	0604245M	H-1 UPGRADES .....	58,097	58,097
116	0604261N	ACOUSTIC SEARCH SENSORS .....	42,485	42,485
117	0604262N	V-22A .....	143,079	143,079
118	0604264N	AIR CREW SYSTEMS DEVELOPMENT .....	20,980	30,980
		Increase to advance aircrew physiological monitoring .....		10,000
		[10,000]		
119	0604269N	EA-18 .....	147,419	242,719
		UPL—EA-18G Advanced Modes / Cognitive EW .....		95,300
		[95,300]		

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
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Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
120	0604270N	ELECTRONIC WARFARE DEVELOPMENT .....	89,824	31,600	121,424
		UPL—EA-18G Offensive Airborne Electronic Attack Special Mission Pod .....		[31,600]	
121	0604273M	EXECUTIVE HELO DEVELOPMENT .....	245,064		245,064
123	0604274N	NEXT GENERATION JAMMER (NGJ) .....	459,529		459,529
124	0604280N	JOINT TACTICAL RADIO SYSTEM—NAVY (JTRS-NAVY) .....	3,272		3,272
125	0604282N	NEXT GENERATION JAMMER (NGJ) INCREMENT II .....	115,253		115,253
126	0604307N	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING .....	397,403		397,403
127	0604311N	LPD-17 CLASS SYSTEMS INTEGRATION .....	939	50,000	50,939
		Mk 41 VLS integration .....		[50,000]	
128	0604329N	SMALL DIAMETER BOMB (SDB) .....	104,448		104,448
129	0604366N	STANDARD MISSILE IMPROVEMENTS .....	165,881	19,000	184,881
		Navy UPL: SM-6 Blk 1B 21" rocket motor .....		[19,000]	
130	0604373N	AIRBORNE MCM .....	10,831		10,831
131	0604378N	NAVAL INTEGRATED FIRE CONTROL—COUNTER AIR SYSTEMS ENGINEERING .....	33,429		33,429
132	0604501N	ADVANCED ABOVE WATER SENSORS .....	35,635		35,635
133	0604503N	SSN-688 AND TRIDENT MODERNIZATION .....	126,932		126,932
134	0604504N	AIR CONTROL .....	62,448		62,448
135	0604512N	SHIPBOARD AVIATION SYSTEMS .....	9,710		9,710
136	0604518N	COMBAT INFORMATION CENTER CONVERSION .....	19,303		19,303
137	0604522N	AIR AND MISSILE DEFENSE RADAR (AMDR) SYSTEM .....	27,059		27,059
138	0604530N	ADVANCED ARRESTING GEAR (AAG) .....	184,106		184,106
139	0604558N	NEW DESIGN SSN .....	148,233		148,233
140	0604562N	SUBMARINE TACTICAL WARFARE SYSTEM .....	60,824		60,824
141	0604567N	SHIP CONTRACT DESIGN/ LIVE FIRE T&E .....	60,062	6,000	66,062
		Planning to support FY21 award of LHA-9 .....		[6,000]	
142	0604574N	NAVY TACTICAL COMPUTER RESOURCES .....	4,642		4,642
144	0604601N	MINE DEVELOPMENT .....	25,756		25,756

145	0604610N	LIGHTWEIGHT TORPEDO DEVELOPMENT .....	95,147	95,147
146	0604654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT .....	7,107	7,107
147	0604703N	PERSONNEL, TRAINING, SIMULATION, AND HUMAN FACTORS .....	6,539	6,539
148	0604727N	JOINT STANDOFF WEAPON SYSTEMS .....	441	441
149	0604755N	SHIP SELF DEFENSE (DETECT & CONTROL) .....	180,391	180,391
150	0604756N	SHIP SELF DEFENSE (ENGAGE: HARD KILL) .....	178,538	178,538
151	0604757N	SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW) .....	120,507	120,507
152	0604761N	INTELLIGENCE ENGINEERING .....	29,715	29,715
153	0604771N	MEDICAL DEVELOPMENT .....	8,095	8,095
154	0604777N	NAVIGATION/ID SYSTEM .....	121,026	121,026
155	0604800M	JOINT STRIKE FIGHTER (JSF)—EMD .....	66,566	66,566
156	0604800N	JOINT STRIKE FIGHTER (JSF)—EMD .....	65,494	65,494
159	0605013M	INFORMATION TECHNOLOGY DEVELOPMENT .....	14,005	14,005
160	0605013N	INFORMATION TECHNOLOGY DEVELOPMENT .....	268,567	178,467
		Duplication concern in contract writing systems .....		-90,100
		Lengthy delivery timelines for Navy Personnel and Pay System .....		[-26,300]
				[-63,800]
161	0605024N	ANTI-TAMPER TECHNOLOGY SUPPORT .....	5,618	5,618
162	0605212M	CH-53K RDTE .....	326,945	326,945
164	0605215N	MISSION PLANNING .....	32,714	32,714
165	0605217N	COMMON AVIONICS .....	51,486	51,486
166	0605220N	SHIP TO SHORE CONNECTOR (SSC) .....	1,444	1,444
167	0605327N	T-AO 205 CLASS .....	1,298	1,298
168	0605414N	UNMANNED CARRIER AVIATION (UCA) .....	718,942	718,942
169	0605450M	JOINT AIR-TO-GROUND MISSILE (JAGM) .....	6,759	6,759
171	0605500N	MULTI-MISSION MARITIME AIRCRAFT (MMA) .....	37,296	37,296
172	0605504N	MULTI-MISSION MARITIME (MMA) INCREMENT III .....	160,389	160,389
173	0605611M	MARINE CORPS ASSAULT VEHICLES SYSTEM DEVELOPMENT & DEMONSTRATION .....	98,223	98,223
174	0605813M	JOINT LIGHT TACTICAL VEHICLE (JLTV) SYSTEM DEVELOPMENT & DEMONSTRATION .....	2,260	2,260
175	0204202N	DDG-1000 .....	161,264	161,264
180	0304785N	TACTICAL CRYPTOLOGIC SYSTEMS .....	44,098	44,098
182	0306250M	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT .....	6,808	6,808
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION .....</b>	<b>6,042,480</b>	<b>6,148,080</b>
			<b>105,600</b>	

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
		<b>MANAGEMENT SUPPORT</b>			
183	0604256N	THREAT SIMULATOR DEVELOPMENT .....	94,576		94,576
184	0604258N	TARGET SYSTEMS DEVELOPMENT .....	10,981		10,981
185	0604759N	MAJOR I&E INVESTMENT .....	77,014		77,014
186	0605126N	JOINT THEATER AIR AND MISSILE DEFENSE ORGANIZATION .....	48		48
187	0605152N	STUDIES AND ANALYSIS SUPPORT—NAVY .....	3,942		3,942
188	0605154N	CENTER FOR NAVAL ANALYSES .....	48,797		48,797
189	0605285N	NEXT GENERATION FIGHTER .....	5,000		5,000
191	0605804N	TECHNICAL INFORMATION SERVICES .....	1,029		1,029
192	0605853N	MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT .....	87,565	-9,000	78,565
		Insufficient budget justification .....		[-9,000]	
193	0605856N	STRATEGIC TECHNICAL SUPPORT .....	4,231		4,231
194	0605861N	RDT&E SCIENCE AND TECHNOLOGY MANAGEMENT .....	1,072		1,072
195	0605863N	RDT&E SHIP AND AIRCRAFT SUPPORT .....	97,471		97,471
196	0605864N	TEST AND EVALUATION SUPPORT .....	373,834		373,834
197	0605865N	OPERATIONAL TEST AND EVALUATION CAPABILITY .....	21,554		21,554
198	0605866N	NAVY SPACE AND ELECTRONIC WARFARE (SEW) SUPPORT .....	16,227		16,227
200	0605873M	MARINE CORPS PROGRAM WIDE SUPPORT .....	24,303		24,303
201	0605898N	MANAGEMENT HQ—R&D .....	43,262		43,262
202	0606355N	WARFARE INNOVATION MANAGEMENT .....	41,918		41,918
203	0606942M	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	7,000		7,000
204	0606942N	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	48,800		48,800
205	0305327N	INSIDER THREAT .....	1,682		1,682
206	0902498N	MANAGEMENT HEADQUARTERS (DEPARTMENTAL SUPPORT ACTIVITIES) .....	1,579		1,579
208	1206867N	SEW SURVEILLANCE/RECONNAISSANCE SUPPORT .....	8,684		8,684
		<b>SUBTOTAL MANAGEMENT SUPPORT .....</b>	<b>1,020,569</b>	<b>-9,000</b>	<b>1,011,569</b>

9999999999	CLASSIFIED PROGRAMS .....	1,549,503	1,549,503
	<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>		
210	060427N HARPOON MODIFICATIONS .....	5,426	5,426
211	0604840M F-35 C2D2 .....	259,122	259,122
212	0604840N F-35 C2D2 .....	252,360	252,360
213	0607658N COOPERATIVE ENGAGEMENT CAPABILITY (CEC) .....	130,515	130,515
214	0607700N DEPLOYABLE JOINT COMMAND AND CONTROL .....	3,127	3,127
215	0101221N STRATEGIC SUB & WEAPONS SYSTEM SUPPORT .....	157,679	157,679
216	0101224N SSBN SECURITY TECHNOLOGY PROGRAM .....	43,198	43,198
217	0101226N SUBMARINE ACOUSTIC WARFARE DEVELOPMENT .....	11,311	11,311
218	0101402N NAVY STRATEGIC COMMUNICATIONS .....	39,313	39,313
219	0204136N F/A-18 SQUADRONS .....	193,086	193,086
220	0204163N FLEET TELECOMMUNICATIONS (TACTICAL) .....	25,014	25,014
221	0204228N SURFACE SUPPORT .....	11,661	11,661
222	0204229N TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER (TMPC) .....	282,395	282,395
	Restore MST to maintain 2020 IOC .....	8,700	8,700
223	0204311N INTEGRATED SURVEILLANCE SYSTEM .....	[8,700]	[8,700]
	Additional TRAPS units .....	35,000	35,000
	[35,000]		
224	0204313N SHIP-TOWED ARRAY SURVEILLANCE SYSTEMS .....	15,454	15,454
225	0204413N AMPHIBIOUS TACTICAL SUPPORT UNITS (DISPLACEMENT CRAFT) .....	6,073	6,073
226	0204460M GROUND/AIR TASK ORIENTED RADAR (G/ATOR) .....	45,029	45,029
227	0204571N CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT .....	104,903	104,903
228	0204574N CRYPTOLOGIC DIRECT SUPPORT .....	4,544	4,544
229	0204575N ELECTRONIC WARFARE (EW) READINESS SUPPORT .....	66,889	66,889
230	0205601N HARM IMPROVEMENT .....	120,762	120,762
	Cancel ER program .....	-99,240	-99,240
231	0205604N TACTICAL DATA LINKS .....	[12,000]	[12,000]
	UPL—Tactical Targeting Network Technology acceleration .....	12,000	12,000
232	0205620N SURFACE ASW COMBAT SYSTEM INTEGRATION .....	28,421	28,421
233	0205632N MK-48 ADCAP .....	94,155	94,155
234	0205633N AVIATION IMPROVEMENTS .....	121,805	121,805
		15,000	15,000

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
		UPL—FA-18 E/F Super Hornet Engine Enhancements .....		[15,000]	
235	0205675N	OPERATIONAL NUCLEAR POWER SYSTEMS .....	117,028		117,028
236	0206313M	MARINE CORPS COMMUNICATIONS SYSTEMS .....	174,779		174,779
237	0206335M	COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S) .....	4,826		4,826
238	0206623M	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS .....	97,152		97,152
239	0206624M	MARINE CORPS COMBAT SERVICES SUPPORT .....	30,156		30,156
240	0206625M	USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS (MIP) .....	39,976		39,976
241	0206629M	AMPHIBIOUS ASSAULT VEHICLE .....	22,637	-22,637	
		Lacks operational justification/need .....		[-22,637]	
242	0207161N	TACTICAL AIM MISSILES .....	40,121		40,121
243	0207163N	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM) .....	32,473		32,473
249	0303138N	CONSOLIDATED AFLOAT NETWORK ENTERPRISE SERVICES (CANES) .....	23,697		23,697
250	0303140N	INFORMATION SYSTEMS SECURITY PROGRAM .....	44,228		44,228
252	0305192N	MILITARY INTELLIGENCE PROGRAM (MIP) ACTIVITIES .....	6,081		6,081
253	0305204N	TACTICAL UNMANNED AERIAL VEHICLES .....	8,529		8,529
254	0305205N	UAS INTEGRATION AND INTEROPERABILITY .....	41,212		41,212
255	0305208M	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	7,687		7,687
256	0305208N	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	42,846		42,846
257	0305220N	MQ-4C TRITON .....	14,395		14,395
258	0305231N	MQ-8 UAV .....	9,843		9,843
259	0305232M	RQ-11 UAV .....	524		524
260	0305234N	SMALL (LEVEL 0) TACTICAL UAS (STUASLO) .....	5,360		5,360
261	0305239M	RQ-21A .....	10,914		10,914
262	0305241N	MULTI-INTELLIGENCE SENSOR DEVELOPMENT .....	81,231		81,231
263	0305242M	UNMANNED AERIAL SYSTEMS (UAS) PAYLOADS (MIP) .....	5,956		5,956
264	0305421N	RQ-4 MODERNIZATION .....	219,894		219,894
265	0308601N	MODELING AND SIMULATION SUPPORT .....	7,097		7,097

266	0702207N	DEPT MAINTENANCE (NON-IF) .....	36,560		36,560
267	0708730N	MARITIME TECHNOLOGY (MARITECH) .....	7,284		7,284
268	1203109N	SATELLITE COMMUNICATIONS (SPACE) .....	39,174		39,174
		<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>4,885,060</b>	<b>-51,177</b>	<b>4,833,883</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, NAVY .....</b>	<b>18,481,666</b>	<b>55,177</b>	<b>18,536,843</b>
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, AF</b>			
		<b>BASIC RESEARCH</b>			
1	0601102F	DEFENSE RESEARCH SCIENCES .....	348,322	10,000	358,322
		Basic research program increase .....		[5,000]	
		Quantum information sciences .....		[5,000]	
2	0601103F	UNIVERSITY RESEARCH INITIATIVES .....	154,991		154,991
3	0601108F	HIGH ENERGY LASER RESEARCH INITIATIVES .....	14,506	2,500	17,006
		Directed energy research .....		[2,500]	
		<b>SUBTOTAL BASIC RESEARCH .....</b>	<b>517,819</b>	<b>12,500</b>	<b>530,319</b>
		<b>APPLIED RESEARCH</b>			
4	0602102F	MATERIALS .....	125,373	4,000	129,373
		Advanced materials analysis .....		[4,000]	
5	0602201F	AEROSPACE VEHICLE TECHNOLOGIES .....	130,547	5,000	135,547
		High speed systems technology (hypersonic vehicle structures) .....		[5,000]	
6	0602202F	HUMAN EFFECTIVENESS APPLIED RESEARCH .....	112,518		112,518
7	0602203F	AEROSPACE PROPULSION .....	190,919	22,500	213,419
		Affordable Responsive Modular Rocket .....		[15,000]	
		Multi-mode propulsion .....		[3,000]	
		Solid rocket motor produce on-demand .....		[2,000]	
		Turbine engine technology .....		[2,500]	
8	0602204F	AEROSPACE SENSORS .....	166,534	-7,500	159,034
		General program reduction .....		[7,500]	
9	0602298F	SCIENCE AND TECHNOLOGY MANAGEMENT—MAJOR HEADQUARTERS ACTIVITIES .....	8,288		8,288
11	0602602F	CONVENTIONAL MUNITIONS .....	112,841		112,841

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
12	0602605F	DIRECTED ENERGY TECHNOLOGY .....	141,898	4,000	145,898
		Skywave technologies laboratory .....		[4,000]	
13	0602788F	DOMINANT INFORMATION SCIENCES AND METHODS .....	162,420		162,420
14	0602890F	HIGH ENERGY LASER RESEARCH .....	43,359	12,500	55,859
		Directed energy research .....		[2,500]	
		High powered microwave .....		[10,000]	
15	1206601F	SPACE TECHNOLOGY .....	117,645	6,000	123,645
		Wargaming and simulator lab .....		[6,000]	
		<b>SUBTOTAL APPLIED RESEARCH .....</b>	<b>1,312,342</b>	<b>46,500</b>	<b>1,358,842</b>
		<b>ADVANCED TECHNOLOGY DEVELOPMENT</b>			
16	0603112F	ADVANCED MATERIALS FOR WEAPON SYSTEMS .....	34,426	-2,500	31,926
		General program reduction .....		[-5,000]	
		Materials affordability .....		[2,500]	
17	0603199F	SUSTAINMENT SCIENCE AND TECHNOLOGY (S&T) .....	15,150	1,000	16,150
		Prevention/enhanced maintainability technologies .....		[1,000]	
18	0603203F	ADVANCED AEROSPACE SENSORS .....	39,968		39,968
19	0603211F	AEROSPACE TECHNOLOGY DEV/DEMO .....	121,002	10,000	131,002
		Design/Manufacture aircraft aft body drag reduction devices .....		[10,000]	
20	0603216F	AEROSPACE PROPULSION AND POWER TECHNOLOGY .....	115,462	24,000	139,462
		General program increase .....		[9,000]	
		Multi-mode propulsion .....		[5,000]	
		Technology for the Sustainment of Strategic Systems .....		[10,000]	
21	0603270F	ELECTRONIC COMBAT TECHNOLOGY .....	55,319	5,000	60,319
		RF/EO/IR warning and countermeasures .....		[5,000]	
22	0603401F	ADVANCED SPACECRAFT TECHNOLOGY .....	54,895		54,895
23	0603444F	MAUI SPACE SURVEILLANCE SYSTEM (MSSS) .....	10,674		10,674

24	0603456F	HUMAN EFFECTIVENESS ADVANCED TECHNOLOGY DEVELOPMENT .....	36,463		36,463
25	0603601F	CONVENTIONAL WEAPONS TECHNOLOGY .....	194,981		194,981
26	0603605F	ADVANCED WEAPONS TECHNOLOGY .....	43,368	10,000	53,368
		Demonstrator laser weapon system .....		[10,000]	
27	0603680F	MANUFACTURING TECHNOLOGY PROGRAM .....	42,025		42,025
28	0603788F	BATTLESPACE KNOWLEDGE DEVELOPMENT AND DEMONSTRATION .....	51,064		51,064
		<b>SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT .....</b>	<b>814,797</b>	<b>47,500</b>	<b>862,297</b>
<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>					
30	0603260F	INTELLIGENCE ADVANCED DEVELOPMENT .....	5,568		5,568
32	0603742F	COMBAT IDENTIFICATION TECHNOLOGY .....	18,194		18,194
33	0603790F	NATO RESEARCH AND DEVELOPMENT .....	2,305		2,305
35	0603851F	INTERCONTINENTAL BALLISTIC MISSILE—DEW/VAL .....	41,856		41,856
37	0604015F	LONG RANGE STRIKE—BOMBER .....	2,314,196		2,314,196
38	0604201F	INTEGRATED AVIONICS PLANNING AND DEVELOPMENT .....	14,894		14,894
39	0604257F	ADVANCED TECHNOLOGY AND SENSORS .....	34,585		34,585
40	0604288F	NATIONAL AIRBORNE OPS CENTER (NAOC) RECAP .....	9,740		9,740
41	0604317F	TECHNOLOGY TRANSFER .....	12,960		12,960
42	0604327F	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM (HDBTDS) PROGRAM .....	71,501		71,501
43	0604414F	CYBER RESILIENCY OF WEAPON SYSTEMS-ACS .....	62,618		62,618
46	0604766F	DEPLOYMENT & DISTRIBUTION ENTERPRISE R&D .....	28,350	10,000	38,350
		Tanker prototype .....		[10,000]	
48	0604858F	TECH TRANSITION PROGRAM .....	1,186,075	222,800	1,408,875
		Acceleration of Hypersonic Conventional Strike Weapon .....		[100,000]	
		Low cost attritable aircraft prototype .....		[80,000]	
		Rapid Sustainment Initiative .....		[42,800]	
49	0605230F	GROUND BASED STRATEGIC DETERRENT .....	345,041	69,400	414,441
		UPL program acceleration .....		[69,400]	
50	0207110F	NEXT GENERATION AIR DOMINANCE .....	503,997		503,997
51	0207455F	THREE DIMENSIONAL LONG-RANGE RADAR (3DELRR) .....	40,326		40,326
52	0208099F	UNIFIED PLATFORM (UP) .....	29,800		29,800
54	0305236F	COMMON DATA LINK EXECUTIVE AGENT (CDL EA) .....	41,880		41,880

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
55	0305601F	MISSION PARTNER ENVIRONMENTS .....	10,074		10,074
56	0306250F	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT .....	253,825		253,825
57	0306415F	ENABLED CYBER ACTIVITIES .....	16,325		16,325
59	0901410F	CONTRACTING INFORMATION TECHNOLOGY SYSTEM .....	17,577	-17,577	
		Duplication concern .....			
60	1203164F	NAVSTAR GLOBAL POSITIONING SYSTEM (USER EQUIPMENT) (SPACE) .....	286,629	[-17,577]	286,629
61	1203710F	EO/IR WEATHER SYSTEMS .....	7,940		7,940
62	1206422F	WEATHER SYSTEM FOLLOW-ON .....	138,052		138,052
63	1206425F	SPACE SITUATION AWARENESS SYSTEMS .....	39,338		39,338
64	1206434F	MIDTERM POLAR MILSATCOM SYSTEM .....	383,113		383,113
65	1206438F	SPACE CONTROL TECHNOLOGY .....	91,018		91,018
66	1206730F	SPACE SECURITY AND DEFENSE PROGRAM .....	45,542		45,542
67	1206760F	PROTECTED TACTICAL ENTERPRISE SERVICE (PTES) .....	51,419		51,419
68	1206761F	PROTECTED TACTICAL SERVICE (PTS) .....	29,776		29,776
69	1206855F	PROTECTED SATCOM SERVICES (PSCS)—AGGREGATED .....	29,379		29,379
70	1206857F	OPERATIONALLY RESPONSIVE SPACE .....	366,050	-50,000	316,050
		Space RCO Solar Power Project—Early to need .....		[-50,000]	
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES .....</b>	<b>6,529,943</b>	<b>234,623</b>	<b>6,764,566</b>
<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>					
71	0604200F	FUTURE ADVANCED WEAPON ANALYSIS & PROGRAMS .....	39,602		39,602
72	0604201F	INTEGRATED AVIONICS PLANNING AND DEVELOPMENT .....	58,531		58,531
73	0604222F	NUCLEAR WEAPONS SUPPORT .....	4,468		4,468
74	0604270F	ELECTRONIC WARFARE DEVELOPMENT .....	1,909		1,909
75	0604281F	TACTICAL DATA NETWORKS ENTERPRISE .....	207,746	50,000	257,746
		Increase to accelerate 21st Century Battle Management Command and Control .....		[50,000]	
76	0604287F	PHYSICAL SECURITY EQUIPMENT .....	14,421		14,421

77	0604329F	SMALL DIAMETER BOMB (SDB)—EMD .....	73,158	73,158
81	0604429F	AIRBORNE ELECTRONIC ATTACK .....	7,153	7,153
83	0604602F	ARMAMENT/ORDNANCE DEVELOPMENT .....	58,590	58,590
84	0604604F	SUBMUNITIONS .....	2,990	2,990
85	0604617F	AGILE COMBAT SUPPORT .....	20,028	20,028
86	0604618F	JOINT DIRECT ATTACK MUNITION .....	15,787	15,787
87	0604706F	LIFE SUPPORT SYSTEMS .....	8,919	8,919
88	0604735F	COMBAT TRAINING RANGES .....	35,895	35,895
89	0604800F	F-35—EMD .....	69,001	69,001
90	0307581F	JSTARS RECAP .....	0	50,000
		Continue JSTARS recap GMTI radar development .....		[50,000]
91	0604932F	LONG RANGE STANDOFF WEAPON .....	614,920	85,000
		UPL Program acceleration .....		[85,000]
92	0604933F	ICBM FUZE MODERNIZATION .....	172,902	172,902
97	0605221F	KC-46 .....	88,170	88,170
98	0605233F	ADVANCED PILOT TRAINING .....	265,465	265,465
99	0605239F	COMBAT RESCUE HELICOPTER .....	457,652	457,652
105	0605830F	ACQ WORKFORCE- GLOBAL BATTLE MGMT .....	3,617	3,617
106	0605931F	B-2 DEFENSIVE MANAGEMENT SYSTEM .....	261,758	261,758
107	0101125F	NUCLEAR WEAPONS MODERNIZATION .....	91,907	91,907
108	0207171F	F-15 EPAWSS .....	137,095	137,095
109	0207328F	STAND IN ATTACK WEAPON .....	43,175	43,175
110	0207423F	ADVANCED COMMUNICATIONS SYSTEMS .....	14,888	14,888
111	0207701F	FULL COMBAT MISSION TRAINING .....	1,015	1,015
116	0401310F	C-32 EXECUTIVE TRANSPORT RECAPITALIZATION .....	7,943	7,943
117	0401319F	PRESIDENTIAL AIRCRAFT RECAPITALIZATION (PAR) .....	673,032	673,032
118	0701212F	AUTOMATED TEST SYSTEMS .....	13,653	13,653
119	1203176F	COMBAT SURVIVOR EVADER LOCATOR .....	939	939
120	1203269F	GPS IIC .....	451,889	451,889
121	1203940F	SPACE SITUATION AWARENESS OPERATIONS .....	46,668	46,668
122	1206421F	COUNTERSPACE SYSTEMS .....	20,676	20,676
123	1206425F	SPACE SITUATION AWARENESS SYSTEMS .....	134,463	134,463

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
124	1206426F	SPACE FENCE .....	20,215		20,215
125	1206431F	ADVANCED EHF MILSATCOM (SPACE) .....	151,506		151,506
126	1206432F	POLAR MILSATCOM (SPACE) .....	27,337		27,337
127	1206433F	WIDEBAND GLOBAL SATCOM (SPACE) .....	3,970		3,970
128	1206441F	SPACE BASED INFRARED SYSTEM (SBIRS) HIGH EMD .....	60,565		60,565
129	1206442F	EVOLVED SBIRS .....	643,126	100,000	743,126
		Accelerate sensor development .....		[100,000]	
130	1206853F	EVOLVED EXPENDABLE LAUNCH VEHICLE PROGRAM (SPACE)—EMD .....	245,447		245,447
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION .....</b>	<b>5,272,191</b>	<b>285,000</b>	<b>5,557,191</b>
		<b>MANAGEMENT SUPPORT</b>			
131	0604256F	THREAT SIMULATOR DEVELOPMENT .....	34,256		34,256
132	0604759F	MAJOR T&E INVESTMENT .....	91,844	15,000	106,844
		Test infrastructure improvements .....		[15,000]	
133	0605101F	RAND PROJECT AIR FORCE .....	34,614		34,614
135	0605712F	INITIAL OPERATIONAL TEST & EVALUATION .....	18,043		18,043
136	0605807F	TEST AND EVALUATION SUPPORT .....	692,784		692,784
137	0605826F	ACQ WORKFORCE- GLOBAL POWER .....	233,924		233,924
138	0605827F	ACQ WORKFORCE- GLOBAL VIG & COMBAT SYS .....	263,488		263,488
139	0605828F	ACQ WORKFORCE- GLOBAL REACH .....	153,591		153,591
140	0605829F	ACQ WORKFORCE- CYBER, NETWORK, & BUS SYS .....	232,315		232,315
141	0605830F	ACQ WORKFORCE- GLOBAL BATTLE MGMT .....	169,868		169,868
142	0605831F	ACQ WORKFORCE- CAPABILITY INTEGRATION .....	226,219		226,219
143	0605832F	ACQ WORKFORCE- ADVANCED PRGM TECHNOLOGY .....	38,400		38,400
144	0605833F	ACQ WORKFORCE- NUCLEAR SYSTEMS .....	125,761		125,761
147	0605898F	MANAGEMENT HQ—R&D .....	10,642		10,642
148	0605976F	FACILITIES RESTORATION AND MODERNIZATION—TEST AND EVALUATION SUPPORT .....	162,216		162,216

149	0605978F	FACILITIES SUSTAINMENT—TEST AND EVALUATION SUPPORT .....	28,888	28,888
150	0606017F	REQUIREMENTS ANALYSIS AND MATURATION .....	35,285	35,285
153	0308602F	ENTERPRISE INFORMATION SERVICES (EIS) .....	20,545	20,545
154	0702806F	ACQUISITION AND MANAGEMENT SUPPORT .....	12,367	12,367
155	0804731F	GENERAL SKILL TRAINING .....	1,448	1,448
157	1001004F	INTERNATIONAL ACTIVITIES .....	3,998	3,998
158	1206116F	SPACE TEST AND TRAINING RANGE DEVELOPMENT .....	23,254	23,254
159	1206392F	SPACE AND MISSILE CENTER (SMC) CIVILIAN WORKFORCE .....	169,912	169,912
160	1206398F	SPACE & MISSILE SYSTEMS CENTER—MHA .....	10,508	10,508
161	1206860F	ROCKET SYSTEMS LAUNCH PROGRAM (SPACE) .....	19,721	19,721
162	1206864F	SPACE TEST PROGRAM (STP) .....	25,620	25,620
		<b>SUBTOTAL MANAGEMENT SUPPORT .....</b>	<b>2,839,511</b>	<b>2,854,511</b>
		CLASSIFIED PROGRAMS .....	16,534,124	16,534,124
		<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>		
165	0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING .....	11,344	11,344
167	0605018F	AF INTEGRATED PERSONNEL AND PAY SYSTEM (AF-IPPS) .....	47,287	13,141
		Poor agile development implementation and lengthy delivery timeline .....		-34,146
168	0605024F	ANTI-TAMPER TECHNOLOGY EXECUTIVE AGENCY .....	32,770	32,770
169	0605117F	FOREIGN MATERIEL ACQUISITION AND EXPLOITATION .....	68,368	68,368
170	0605278F	HC/MC-130 RECAP RDT&E .....	32,574	32,574
171	0606018F	NC3 INTEGRATION .....	26,112	26,112
172	0606942F	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	99,100	99,100
173	0101113F	B-52 SQUADRONS .....	280,414	295,214
		Air Force requested realignment .....		14,800
174	0101122F	AIR-LAUNCHED CRUISE MISSILE (ALCM) .....	5,955	[14,800]
175	0101126F	B-1B SQUADRONS .....	76,030	76,030
176	0101127F	B-2 SQUADRONS .....	105,561	105,561
177	0101213F	MINUTEMAN SQUADRONS .....	156,047	156,047
179	0101316F	WORLDWIDE JOINT STRATEGIC COMMUNICATIONS .....	10,442	10,442
180	0101324F	INTEGRATED STRATEGIC PLANNING & ANALYSIS NETWORK .....	22,833	22,833
181	0101328F	ICBM REENTRY VEHICLES .....	18,412	18,412

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
183	0102110F	UH-1N REPLACEMENT PROGRAM .....	288,022		288,022
184	0102326F	REGION/SECTOR OPERATION CONTROL CENTER MODERNIZATION PROGRAM .....	9,252		9,252
186	0205219F	MQ-9 UAV .....	115,345		115,345
188	0207131F	A-10 SQUADRONS .....	26,738		26,738
189	0207133F	F-16 SQUADRONS .....	191,564		191,564
190	0207134F	F-15E SQUADRONS .....	192,883		192,883
191	0207136F	MANNED DESTRUCTIVE SUPPRESSION .....	15,238		15,238
192	0207138F	F-22A SQUADRONS .....	603,553		603,553
193	0207142F	F-35 SQUADRONS .....	549,501		549,501
194	0207161F	TACTICAL AIM MISSILES .....	37,230		37,230
195	0207163F	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM) .....	61,393		61,393
196	0207227F	COMBAT RESCUE—PARARESCUE .....	647		647
198	0207249F	PRECISION ATTACK SYSTEMS PROCUREMENT .....	14,891		14,891
199	0207253F	COMPASS CALL .....	13,901		13,901
200	0207268F	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM .....	121,203		121,203
202	0207325F	JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM) .....	60,062		60,062
203	0207410F	AIR & SPACE OPERATIONS CENTER (AOC) .....	106,102		106,102
204	0207412F	CONTROL AND REPORTING CENTER (CRC) .....	6,413		6,413
205	0207417F	AIRBORNE WARNING AND CONTROL SYSTEM (AWACS) .....	120,664	10,000	130,664
		Increase to accelerate 21st Century Battle Management Command and Control .....		[10,000]	
206	0207418F	TACTICAL AIRBORNE CONTROL SYSTEMS .....	2,659		2,659
208	0207431F	COMBAT AIR INTELLIGENCE SYSTEM ACTIVITIES .....	10,316		10,316
209	0207444F	TACTICAL AIR CONTROL PARTY-MOD .....	6,149		6,149
210	0207448F	C2ISR TACTICAL DATA LINK .....	1,738		1,738
211	0207452F	DCAPES .....	13,297		13,297
212	0207573F	NATIONAL TECHNICAL NUCLEAR FORENSICS .....	1,788		1,788
213	0207581F	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM (JSTAR) .....	14,888		14,888

214	0207590F	SEEK EAGLE .....	24,699
215	0207601F	USAF MODELING AND SIMULATION .....	17,078
216	0207605F	WARGAMING AND SIMULATION CENTERS .....	6,141
218	0207697F	DISTRIBUTED TRAINING AND EXERCISES .....	4,225
219	0208006F	MISSION PLANNING SYSTEMS .....	63,653
220	0208007F	TACTICAL DECEPTION .....	6,949
221	0208087F	AF OFFENSIVE CYBERSPACE OPERATIONS .....	40,526
222	0208088F	AF DEFENSIVE CYBERSPACE OPERATIONS .....	24,166
223	0208097F	JOINT CYBER COMMAND AND CONTROL (JCC2) .....	13,000
224	0208099F	UNIFIED PLATFORM (UP) .....	28,759
229	0301017F	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN) .....	3,579
230	0301112F	NUCLEAR PLANNING AND EXECUTION SYSTEM (NPES) .....	29,620
237	0301401F	AIR FORCE SPACE AND CYBER NON-TRADITIONAL ISR FOR BATTLESPACE AWARENESS .....	6,633
238	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER (NAOC) .....	57,758
240	0303131F	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN) .....	99,088
241	0303133F	HIGH FREQUENCY RADIO SYSTEMS .....	51,612
242	0303140F	INFORMATION SYSTEMS SECURITY PROGRAM .....	34,612
244	0303142F	GLOBAL FORCE MANAGEMENT—DATA INITIATIVE .....	2,170
246	0304260F	AIRBORNE SIGINT ENTERPRISE .....	106,873
247	0304310F	COMMERCIAL ECONOMIC ANALYSIS .....	3,472
250	0305015F	C2 AIR OPERATIONS SUITE—C2 INFO SERVICES .....	8,608
251	0305020F	CCMD INTELLIGENCE INFORMATION TECHNOLOGY .....	1,586
252	0305099F	GLOBAL AIR TRAFFIC MANAGEMENT (GATM) .....	4,492
254	0305111F	WEATHER SERVICE .....	26,942
255	0305114F	AIR TRAFFIC CONTROL, APPROACH, AND LANDING SYSTEM (ATCAL) .....	6,271
256	0305116F	AERIAL TARGETS .....	8,383
259	0305128F	SECURITY AND INVESTIGATIVE ACTIVITIES .....	418
261	0305146F	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES .....	3,845
268	0305202F	DRAGON U-2 .....	48,518
270	0305206F	AIRBORNE RECONNAISSANCE SYSTEMS .....	175,334
271	0305207F	MANNED RECONNAISSANCE SYSTEMS .....	14,223
272	0305208F	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	24,554

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
273	0305220F	RQ-4 UAV .....	221,690		221,690
274	0305221F	NETWORK-CENTRIC COLLABORATIVE TARGETING .....	14,288		14,288
275	0305238F	NATO AGS .....	51,527		51,527
276	0305240F	SUPPORT TO DCGS ENTERPRISE .....	26,579		26,579
278	0305600F	INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARCHITECTURES .....	8,464		8,464
280	0305881F	RAPID CYBER ACQUISITION .....	4,303		4,303
284	0305984F	PERSONNEL RECOVERY COMMAND & CTRL (PRC2) .....	2,466		2,466
285	0307577F	INTELLIGENCE MISSION DATA (IMD) .....	4,117		4,117
287	0401115F	C-130 AIRLIFT SQUADRON .....	105,988		105,988
288	0401119F	C-5 AIRLIFT SQUADRONS (IF) .....	25,071		25,071
289	0401130F	C-17 AIRCRAFT (IF) .....	48,299		48,299
290	0401132F	C-130J PROGRAM .....	15,409		15,409
291	0401134F	LARGE AIRCRAFT IR COUNTERMEASURES (LAIRCM) .....	4,334		4,334
292	0401218F	KC-135S .....	3,493		3,493
293	0401219F	KC-10S .....	6,569		6,569
294	0401314F	OPERATIONAL SUPPORT AIRLIFT .....	3,172		3,172
295	0401318F	CV-22 .....	18,502		18,502
296	0401840F	AMC COMMAND AND CONTROL SYSTEM .....	1,688		1,688
297	0408011F	SPECIAL TACTICS / COMBAT CONTROL .....	2,541		2,541
298	0702207F	DEPOT MAINTENANCE (NON-IF) .....	1,897		1,897
299	0708055F	MAINTENANCE, REPAIR & OVERHAUL SYSTEM .....	50,933	-35,060	15,873
		Poor agile development implementation .....		[-35,060]	
300	0708610F	LOGISTICS INFORMATION TECHNOLOGY (LOGIT) .....	13,787		13,787
301	0708611F	SUPPORT SYSTEMS DEVELOPMENT .....	4,497		4,497
302	0804743F	OTHER FLIGHT TRAINING .....	2,022		2,022
303	0808716F	OTHER PERSONNEL ACTIVITIES .....	108		108
304	0901202F	JOINT PERSONNEL RECOVERY AGENCY .....	2,023		2,023

305	0901218F	CIVILIAN COMPENSATION PROGRAM .....	3,772		3,772
306	0901220F	PERSONNEL ADMINISTRATION .....	6,358		6,358
307	0901226F	AIR FORCE STUDIES AND ANALYSIS AGENCY .....	1,418		1,418
308	0901538F	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT .....	99,734	-11,816	87,918
		Poor agile development implementation .....		[-11,816]	
309	1201921F	SERVICE SUPPORT TO STRATCOM—SPACE ACTIVITIES .....	14,161		14,161
310	1202247F	AF TENCAP .....	26,986		26,986
311	1203001F	FAMILY OF ADVANCED BLOS TERMINALS (FAB-T) .....	80,168		80,168
312	1203110F	SATELLITE CONTROL NETWORK (SPACE) .....	17,808		17,808
314	1203165F	NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE AND CONTROL SEGMENTS) .....	8,937		8,937
315	1203173F	SPACE AND MISSILE TEST AND EVALUATION CENTER .....	59,935		59,935
316	1203174F	SPACE INNOVATION, INTEGRATION AND RAPID TECHNOLOGY DEVELOPMENT .....	21,019		21,019
317	1203179F	INTEGRATED BROADCAST SERVICE (IBS) .....	8,568		8,568
318	1203182F	SPACELIFT RANGE SYSTEM (SPACE) .....	10,641		10,641
319	1203265F	GPS III SPACE SEGMENT .....	144,543		144,543
320	1203400F	SPACE SUPERIORITY INTELLIGENCE .....	16,278		16,278
321	1203614F	JSPOC MISSION SYSTEM .....	72,256	-10,000	62,256
		Assumed cost savings .....		[-10,000]	
322	1203620F	NATIONAL SPACE DEFENSE CENTER .....	42,209		42,209
325	1203913F	NUDET DETECTION SYSTEM (SPACE) .....	19,778		19,778
326	1203940F	SPACE SITUATION AWARENESS OPERATIONS .....	19,572		19,572
327	1206423F	GLOBAL POSITIONING SYSTEM III—OPERATIONAL CONTROL SEGMENT .....	513,235		513,235
		<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>22,891,740</b>	<b>-66,222</b>	<b>22,825,518</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, AF .....</b>	<b>40,178,343</b>	<b>574,901</b>	<b>40,753,244</b>
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, DW</b>			
		<b>BASIC RESEARCH</b>			
1	0601000BR	DTRA BASIC RESEARCH .....	37,023		37,023
2	0601101E	DEFENSE RESEARCH SCIENCES .....	422,130	7,500	429,630
		Basic research program increase .....		[5,000]	
		Critical materials .....		[2,500]	

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
3	0601110D8Z	BASIC RESEARCH INITIATIVES .....	42,702	10,000	52,702
		Quantum information sciences .....		[5,000]	
		University-lab research partnership .....		[5,000]	
4	0601117E	BASIC OPERATIONAL MEDICAL RESEARCH SCIENCE .....	47,825	10,000	57,825
		TBI Treatment for blast injuries .....		[10,000]	
5	0601120D8Z	NATIONAL DEFENSE EDUCATION PROGRAM .....	85,919		85,919
6	0601228D8Z	HISTORICALLY BLACK COLLEGES AND UNIVERSITIES/MINORITY INSTITUTIONS .....	30,412		30,412
7	0601384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM .....	42,103		42,103
		<b>SUBTOTAL BASIC RESEARCH .....</b>	<b>708,114</b>	<b>27,500</b>	<b>735,614</b>
		<b>APPLIED RESEARCH</b>			
8	0602000D8Z	JOINT MUNITIONS TECHNOLOGY .....	19,170	2,500	21,670
		Insensitive munitions .....		[2,500]	
9	0602115E	BIOMEDICAL TECHNOLOGY .....	101,300		101,300
11	0602234D8Z	LINCOLN LABORATORY RESEARCH PROGRAM .....	51,596		51,596
12	0602251D8Z	APPLIED RESEARCH FOR THE ADVANCEMENT OF S&T PRIORITIES .....	60,688	-7,500	53,188
		General program reduction .....		[-7,500]	
13	0602303E	INFORMATION & COMMUNICATIONS TECHNOLOGY .....	395,317		395,317
14	0602383E	BIOLOGICAL WARFARE DEFENSE .....	38,640		38,640
15	0602384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM .....	192,674		192,674
16	0602668D8Z	CYBER SECURITY RESEARCH .....	14,969		14,969
17	0602702E	TACTICAL TECHNOLOGY .....	335,466	-2,500	332,966
		General program increase .....		[2,500]	
		MAD-FIRES reduction .....		[-5,000]	
18	0602715E	MATERIALS AND BIOLOGICAL TECHNOLOGY .....	226,898	-15,000	211,898
		General program reduction .....		[-15,000]	
19	0602716E	ELECTRONICS TECHNOLOGY .....	333,847		333,847

20	0602718BR	COUNTER WEAPONS OF MASS DESTRUCTION APPLIED RESEARCH .....	161,151		161,151
21	0602751D8Z	SOFTWARE ENGINEERING INSTITUTE (SEI) APPLIED RESEARCH .....	9,300		9,300
22	1160401BB	SOF TECHNOLOGY DEVELOPMENT .....	35,921		35,921
		<b>SUBTOTAL APPLIED RESEARCH .....</b>	<b>1,976,937</b>	<b>-22,500</b>	<b>1,954,437</b>
<b>ADVANCED TECHNOLOGY DEVELOPMENT</b>					
23	0603000D8Z	JOINT MUNITIONS ADVANCED TECHNOLOGY .....	25,598		25,598
24	0603122D8Z	COMBATING TERRORISM TECHNOLOGY SUPPORT .....	125,271	-14,000	111,271
		General program reduction .....		[-14,000]	
25	0603133D8Z	FOREIGN COMPARATIVE TESTING .....	24,532		24,532
27	0603160BR	COUNTER WEAPONS OF MASS DESTRUCTION ADVANCED TECHNOLOGY DEVELOPMENT .....	299,858		299,858
28	0603176C	ADVANCED CONCEPTS AND PERFORMANCE ASSESSMENT .....	13,017		13,017
29	0603178C	WEAPONS TECHNOLOGY .....	0	13,400	13,400
		MDA UPL: Accelerate hypersonic missile defense .....		[13,400]	
31	0603180C	ADVANCED RESEARCH .....	20,365	22,200	42,565
		Accelerate hypersonic missile defense .....		[22,200]	
32	0603225D8Z	JOINT DOD-DOE MUNITIONS TECHNOLOGY DEVELOPMENT .....	18,644		18,644
34	0603286E	ADVANCED AEROSPACE SYSTEMS .....	277,603	5,000	282,603
		Hypersonics weapons programs development and transition .....		[5,000]	
35	0603287E	SPACE PROGRAMS AND TECHNOLOGY .....	254,671	110,000	364,671
		Blackjack increase .....		[110,000]	
36	0603288D8Z	ANALYTIC ASSESSMENTS .....	19,472		19,472
37	0603289D8Z	ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS .....	37,263		37,263
38	0603291D8Z	ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS—MHA .....	13,621		13,621
39	0603294C	COMMON KILL VEHICLE TECHNOLOGY .....	189,753		189,753
40	0603342D8W	DEFENSE INNOVATION UNIT EXPERIMENTAL (DIUX) .....	29,364	500	29,864
		Defense technology innovation .....		[500]	
41	0603375D8Z	TECHNOLOGY INNOVATION .....	83,143	20,000	103,143
		Commercial SAR satellites .....		[20,000]	
42	0603384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—ADVANCED DEVELOPMENT .....	142,826		142,826
43	0603527D8Z	RETRACT LARCH .....	161,128		161,128
44	0603618D8Z	JOINT ELECTRONIC ADVANCED TECHNOLOGY .....	12,918		12,918

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
45	0603648D8Z	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS .....	106,049		106,049
46	0603662D8Z	NETWORKED COMMUNICATIONS CAPABILITIES .....	12,696	-7,500	5,196
		General program reduction .....		[-7,500]	
47	0603680D8Z	DEFENSE-WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROGRAM .....	114,637	7,000	121,637
		Enhancing cybersecurity for small vendors .....		[5,000]	
		Eye protection system .....		[2,000]	
48	0603680S	MANUFACTURING TECHNOLOGY PROGRAM .....	49,667	2,500	52,167
		General program increase .....		[2,500]	
49	0603699D8Z	EMERGING CAPABILITIES TECHNOLOGY DEVELOPMENT .....	48,338		48,338
50	0603712S	GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS .....	11,778	1,000	12,778
		General program increase .....		[1,000]	
52	0603716D8Z	STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM .....	76,514	10,000	86,514
		Readiness Increase .....		[10,000]	
53	0603720S	MICROELECTRONICS TECHNOLOGY DEVELOPMENT AND SUPPORT .....	168,931	5,000	173,931
		Tunable filter, support for microelectronics development .....		[5,000]	
54	0603727D8Z	JOINT WARFIGHTING PROGRAM .....	5,992		5,992
55	0603739E	ADVANCED ELECTRONICS TECHNOLOGIES .....	111,099	7,500	118,599
		Support for the Electronics Resurgence Initiative .....		[7,500]	
56	0603760E	COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS .....	185,984		185,984
57	0603766E	NETWORK-CENTRIC WARFARE TECHNOLOGY .....	438,569	-10,000	428,569
		General program reduction .....		[-10,000]	
58	0603767E	SENSOR TECHNOLOGY .....	190,128	1,500	191,628
		Sensors and processing systems technology .....		[1,500]	
59	0603769D8Z	DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT .....	13,564		13,564
60	0603781D8Z	SOFTWARE ENGINEERING INSTITUTE .....	15,050		15,050
61	0603826D8Z	QUICK REACTION SPECIAL PROJECTS .....	69,626	-10,000	59,626
		General program reduction .....		[-10,000]	

62	0603833D8Z	ENGINEERING SCIENCE & TECHNOLOGY .....	19,415		19,415
63	0603924D8Z	HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM .....	69,533		69,533
64	0603941D8Z	TEST & EVALUATION SCIENCE & TECHNOLOGY .....	96,389	15,000	111,389
		Hypersonics and directed energy test .....		[10,000]	
		Workforce development .....		[5,000]	
65	0604055D8Z	OPERATIONAL ENERGY CAPABILITY IMPROVEMENT .....	40,582	10,000	50,582
		Readiness Increase .....		[10,000]	
66	0303310D8Z	CWMD SYSTEMS .....	26,644		26,644
67	1160402BB	SOF ADVANCED TECHNOLOGY DEVELOPMENT .....	79,380		79,380
300	8888	NATIONAL SECURITY INNOVATION ACTIVITIES .....	0		150,000
		Establish office for capital investment .....		[150,000]	
		<b>SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT .....</b>	<b>3,699,612</b>	<b>339,100</b>	<b>4,038,712</b>
<b>ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES</b>					
68	0603161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E ADC&P .....	28,140		28,140
69	0603600D8Z	WALKOFF .....	92,222		92,222
70	0603821D8Z	ACQUISITION ENTERPRISE DATA & INFORMATION SERVICES .....	2,506		2,506
71	0603851D8Z	ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM .....	40,016	10,000	50,016
		Readiness Increase .....		[10,000]	
72	0603881C	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT .....	214,173	184,100	398,273
		MDA UPL: USFK JEON .....		[184,100]	
73	0603882C	BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT .....	926,359	-208,000	718,359
		Reduce FY19 Numbers .....		[-208,000]	
74	0603884BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—DEMAVAL .....	129,886		129,886
75	0603884C	BALLISTIC MISSILE DEFENSE SENSORS .....	220,876	24,000	244,876
		MDA UPL: USFK JEON .....		[24,000]	
76	0603890C	BMD ENABLING PROGRAMS .....	540,926		540,926
77	0603891C	SPECIAL PROGRAMS—MDA .....	422,348		422,348
78	0603892C	AEIS BMD .....	767,539		767,539
81	0603896C	BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT AND COMMUNICATI. ....	475,168	-50,000	425,168
		Inconsistent capability delivery .....		[-50,000]	

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
82	0603898C	BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT .....	48,767		48,767
83	0603904C	MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC) .....	54,925		54,925
84	0603906C	REGARDING TRENCH .....	16,916		16,916
85	0603907C	SEA BASED X-BAND RADAR (SBX) .....	149,715	-33,000	116,715
		Reduce FY19 Numbers .....		[-33,000]	
86	0603913C	ISRAELI COOPERATIVE PROGRAMS .....	300,000		300,000
87	0603914C	BALLISTIC MISSILE DEFENSE TEST .....	365,681	71,900	437,581
		MDA UPL: USFK JEON .....		[71,900]	
88	0603915C	BALLISTIC MISSILE DEFENSE TARGETS .....	517,852	-31,500	486,352
		MDA UPL: USFK JEON .....		[4,500]	
		Reduce FY19 Numbers .....		[-36,000]	
89	0603920D8Z	HUMANITARIAN DEMINING .....	11,347		11,347
90	0603923D8Z	COALITION WARFARE .....	8,528		8,528
91	0604016D8Z	DEPARTMENT OF DEFENSE CORROSION PROGRAM .....	3,477	5,000	8,477
		Corrosion prevention .....		[5,000]	
92	0604115C	TECHNOLOGY MATURATION INITIATIVES .....	148,822	80,000	228,822
		Laser scaling for boost phase intercept .....		[80,000]	
93	0604132D8Z	MISSILE DEFEAT PROJECT .....	58,607		58,607
94	0604134BR	COUNTER IMPROVISED-THREAT DEMONSTRATION, PROTOTYPE DEVELOPMENT, AND TESTING .....	12,993		12,993
95	0604181C	HYPERSONIC DEFENSE .....	120,444	10,500	130,944
		Accelerate hypersonic missile defense .....		[10,500]	
96	0604250D8Z	ADVANCED INNOVATIVE TECHNOLOGIES .....	1,431,702	50,000	1,481,702
		Quartermaster Pathfinder .....		[50,000]	
97	0604294D8Z	TRUSTED & ASSURED MICROELECTRONICS .....	233,142	5,500	238,642
		New trust approach development .....		[5,500]	
98	0604331D8Z	RAPID PROTOTYPING PROGRAM .....	99,333		99,333
99	0604400D8Z	DEPARTMENT OF DEFENSE (DOD) UNMANNED SYSTEM COMMON DEVELOPMENT .....	3,781		3,781

100	0604673C	PACIFIC DISCRIMINATING RADAR .....	95,765	95,765
101	0604682D8Z	WARGAMING AND SUPPORT FOR STRATEGIC ANALYSIS (SSA) .....	3,768	3,768
103	0604826J	JOINT C5 CAPABILITY DEVELOPMENT, INTEGRATION AND INTEROPERABILITY ASSESSMENTS .....	22,435	22,435
104	0604873C	LONG RANGE DISCRIMINATION RADAR (LRDR) .....	164,562	164,562
105	0604874C	IMPROVED HOMELAND DEFENSE INTERCEPTORS .....	561,220	421,820
		Reduce FY19 Numbers .....		[-139,400]
106	0604876C	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT TEST .....	61,017	61,017
107	0604878C	AEGIS BMD TEST .....	95,756	95,756
108	0604879C	BALLISTIC MISSILE DEFENSE SENSOR TEST .....	81,001	81,001
109	0604880C	LAND-BASED SM-3 (LBSM3) .....	27,692	27,692
111	0604887C	BALLISTIC MISSILE DEFENSE MIDCOURSE SEGMENT TEST .....	81,934	72,634
		Reduce FY19 Numbers .....		[-9,300]
112	0604894C	MULTI-OBJECT KILL VEHICLE .....	8,256	8,256
113	0300206R	ENTERPRISE INFORMATION TECHNOLOGY SYSTEMS .....	2,600	2,600
114	0303191D8Z	JOINT ELECTROMAGNETIC TECHNOLOGY (JET) PROGRAM .....	3,104	3,104
115	0305103C	CYBER SECURITY INITIATIVE .....	985	985
116	1206893C	SPACE TRACKING & SURVEILLANCE SYSTEM .....	36,955	36,955
117	1206895C	BALLISTIC MISSILE DEFENSE SYSTEM SPACE PROGRAMS .....	16,484	89,484
		MDA UPL: Infrared missile defense tracking system .....		73,000
		MDA UPL: Infrared missile defense tracking system .....		[73,000]
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES .....</b>	<b>8,709,725</b>	<b>8,752,525</b>
		<b>SYSTEM DEVELOPMENT AND DEMONSTRATION</b>		
118	0604161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E SDD .....	8,333	8,333
119	0604165D8Z	PROMPT GLOBAL STRIKE CAPABILITY DEVELOPMENT .....	263,414	263,414
120	0604384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—EMD .....	388,701	388,701
121	0604771D8Z	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS) .....	19,503	19,503
122	0605000BR	COUNTER WEAPONS OF MASS DESTRUCTION SYSTEMS DEVELOPMENT .....	6,163	6,163
123	0605013BL	INFORMATION TECHNOLOGY DEVELOPMENT .....	11,988	6,163
		Lengthy delivery timelines .....		[-11,988]
124	0605021SE	HOMELAND PERSONNEL SECURITY INITIATIVE .....	296	296
125	0605022D8Z	DEFENSE EXPORTABILITY PROGRAM .....	1,489	1,489
126	0605027D8Z	OUSD(C) IT DEVELOPMENT INITIATIVES .....	9,590	9,590

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
127	0605070S	DOD ENTERPRISE SYSTEMS DEVELOPMENT AND DEMONSTRATION .....	3,173		3,173
128	0605075D8Z	DCMO POLICY AND INTEGRATION .....	2,105	1,000	3,105
		Data and advanced analytics .....		[1,000]	
129	0605080S	DEFENSE AGENCY INITIATIVES (DAI)—FINANCIAL SYSTEM .....	21,156		21,156
130	0605090S	DEFENSE RETIRED AND ANNUITANT PAY SYSTEM (DRAS) .....	10,731		10,731
132	0605210D8Z	DEFENSE-WIDE ELECTRONIC PROCUREMENT CAPABILITIES .....	6,374	-6,374	
		Duplication concern .....		[-6,374]	
133	0605294D8Z	TRUSTED & ASSURED MICROELECTRONICS .....	56,178	2,500	58,678
		New trust approach development .....		[2,500]	
134	0303141K	GLOBAL COMBAT SUPPORT SYSTEM .....	2,512		2,512
135	0305304D8Z	DOD ENTERPRISE ENERGY INFORMATION MANAGEMENT (EEIM) .....	2,435		2,435
136	0305310D8Z	CWMD SYSTEMS: SYSTEM DEVELOPMENT AND DEMONSTRATION .....	17,048		17,048
		<b>SUBTOTAL SYSTEM DEVELOPMENT AND DEMONSTRATION .....</b>	<b>831,189</b>	<b>-14,862</b>	<b>816,327</b>
	9999999999	CLASSIFIED PROGRAMS .....	45,604		45,604
		<b>MANAGEMENT SUPPORT</b>			
137	0604774D8Z	DEFENSE READINESS REPORTING SYSTEM (DRRS) .....	6,661		6,661
138	0604875D8Z	JOINT SYSTEMS ARCHITECTURE DEVELOPMENT .....	4,088		4,088
139	0604940D8Z	CENTRAL TEST AND EVALUATION INVESTMENT DEVELOPMENT (CTEIP) .....	258,796	10,000	268,796
		Advanced hypersonic wind tunnel experimentation .....		[10,000]	
140	0604942D8Z	ASSESSMENTS AND EVALUATIONS .....	31,356		31,356
141	0605001E	MISSION SUPPORT .....	65,646		65,646
142	0605100D8Z	JOINT MISSION ENVIRONMENT TEST CAPABILITY (JMETC) .....	84,184	5,000	89,184
		Cyber range capacity and development .....		[5,000]	
143	0605104D8Z	TECHNICAL STUDIES, SUPPORT AND ANALYSIS .....	22,576	-5,000	17,576
		General program reduction .....		[-5,000]	
144	0605126J	JOINT INTEGRATED AIR AND MISSILE DEFENSE ORGANIZATION (JIAMDO) .....	52,565		52,565

146	0605142D8Z	SYSTEMS ENGINEERING .....	38,872	38,872
147	0605151D8Z	STUDIES AND ANALYSIS SUPPORT—OSD .....	3,534	3,534
148	0605161D8Z	NUCLEAR MATTERS-PHYSICAL SECURITY .....	5,050	5,050
149	0605170D8Z	SUPPORT TO NETWORKS AND INFORMATION INTEGRATION .....	11,450	11,450
150	0605200D8Z	GENERAL SUPPORT TO USD (INTELLIGENCE) .....	1,693	1,693
151	06053848P	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM .....	102,883	102,883
159	0605790D8Z	SMALL BUSINESS INNOVATION RESEARCH (SBIR)/ SMALL BUSINESS TECHNOLOGY TRANSFER .....	2,545	2,545
160	0605798D8Z	DEFENSE TECHNOLOGY ANALYSIS .....	24,487	24,487
161	0605801KA	DEFENSE TECHNICAL INFORMATION CENTER (DTIC) .....	56,853	56,853
162	0605803SE	R&D IN SUPPORT OF DOD ENLISTMENT, TESTING AND EVALUATION .....	24,914	24,914
163	0605804D8Z	DEVELOPMENT TEST AND EVALUATION .....	20,179	25,179
		Improve software testing capabilities .....	5,000	5,000
		MANAGEMENT HQ—R&D .....	[5,000]	[5,000]
164	0605898E	MANAGEMENT HQ—R&D .....	13,643	13,643
165	0605998KA	MANAGEMENT HQ—DEFENSE TECHNICAL INFORMATION CENTER (DTIC) .....	4,124	4,124
166	0606100D8Z	BUDGET AND PROGRAM ASSESSMENTS .....	5,768	5,768
167	0606225D8Z	ODNA TECHNOLOGY AND RESOURCE ANALYSIS .....	1,030	1,030
168	0606589D8W	DEFENSE DIGITAL SERVICE (DDS) DEVELOPMENT SUPPORT .....	1,000	1,000
169	0606942C	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	3,400	3,400
170	0606942S	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES .....	4,000	4,000
171	0203345D8Z	DEFENSE OPERATIONS SECURITY INITIATIVE (DOSI) .....	3,008	3,008
172	0204571J	JOINT STAFF ANALYTICAL SUPPORT .....	6,658	6,658
175	0303166J	SUPPORT TO INFORMATION OPERATIONS (IO) CAPABILITIES .....	652	652
176	0303260D8Z	DEFENSE MILITARY DECEPTION PROGRAM OFFICE (DMIDPO) .....	1,005	1,005
177	0305172K	COMBINED ADVANCED APPLICATIONS .....	21,363	21,363
180	0305245D8Z	INTELLIGENCE CAPABILITIES AND INNOVATION INVESTMENTS .....	109,529	109,529
181	0306310D8Z	CWMD SYSTEMS: RDT&E MANAGEMENT SUPPORT .....	1,244	1,244
184	0804768J	COCOM EXERCISE ENGAGEMENT AND TRAINING TRANSFORMATION (CE2T2)—NON-MHA .....	42,940	42,940
185	0901598C	MANAGEMENT HQ—MDA .....	28,626	28,626
187	0903235K	JOINT SERVICE PROVIDER (JSP) .....	5,104	5,104
		<b>SUBTOTAL MANAGEMENT SUPPORT .....</b>	<b>1,117,030</b>	<b>1,132,030</b>
	99999999999	CLASSIFIED PROGRAMS .....	10,000	3,887,898

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
		Classified increase .....		[10,000]	
		<b>OPERATIONAL SYSTEM DEVELOPMENT</b>			
189	0604130V	ENTERPRISE SECURITY SYSTEM (ESS) .....	9,750		9,750
190	0605127T	REGIONAL INTERNATIONAL OUTREACH (RIO) AND PARTNERSHIP FOR PEACE INFORMATION MANA .....	1,855		1,855
191	0605147T	OVERSEAS HUMANITARIAN ASSISTANCE SHARED INFORMATION SYSTEM (OHASIS) .....	304		304
192	0607210D8Z	INDUSTRIAL BASE ANALYSIS AND SUSTAINMENT SUPPORT .....	10,376		10,376
193	0607310D8Z	CWMD SYSTEMS: OPERATIONAL SYSTEMS DEVELOPMENT .....	5,915		5,915
194	0607327T	GLOBAL THEATER SECURITY COOPERATION MANAGEMENT INFORMATION SYSTEMS (G-TSCMIS) ..	5,869		5,869
195	0607384BP	CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS DEVELOPMENT) .....	48,741		48,741
196	0208043J	PLANNING AND DECISION AID SYSTEM (PDAS) .....	3,037		3,037
197	0208045K	C4I INTEROPERABILITY .....	62,814		62,814
203	0302019K	DEFENSE INFO INFRASTRUCTURE ENGINEERING AND INTEGRATION .....	16,561		16,561
204	0303126K	LONG-HAUL COMMUNICATIONS—DCS .....	14,769		14,769
205	0303131K	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN) .....	17,579		17,579
207	0303136G	KEY MANAGEMENT INFRASTRUCTURE (KMI) .....	31,737		31,737
208	0303140D8Z	INFORMATION SYSTEMS SECURITY PROGRAM .....	7,940		7,940
209	0303140G	INFORMATION SYSTEMS SECURITY PROGRAM .....	229,252		229,252
210	0303140K	INFORMATION SYSTEMS SECURITY PROGRAM .....	19,611		19,611
211	0303150K	GLOBAL COMMAND AND CONTROL SYSTEM .....	46,900		46,900
212	0303153K	DEFENSE SPECTRUM ORGANIZATION .....	7,570		7,570
213	0303228K	JOINT INFORMATION ENVIRONMENT (JIE) .....	7,947		7,947
215	0303430K	FEDERAL INVESTIGATIVE SERVICES INFORMATION TECHNOLOGY .....	39,400		39,400
224	0305186D8Z	POLICY R&D PROGRAMS .....	6,262	-3,000	3,262
		General program reduction .....		[-3,000]	
225	0305199D8Z	NET CENTRICITY .....	16,780		16,780
227	0305208BB	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	6,286		6,286
230	0305208K	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....	2,970		2,970

233	0305327V	INSIDER THREAT .....	5,954	5,000	10,954
		Personnel security and continuous evaluation .....		[5,000]	
234	0305387D8Z	HOMELAND DEFENSE TECHNOLOGY TRANSFER PROGRAM .....	2,198		2,198
240	0307577D8Z	INTELLIGENCE MISSION DATA (IMD) .....	6,889		6,889
242	0708012K	LOGISTICS SUPPORT ACTIVITIES .....	1,317		1,317
243	0708012S	PACIFIC DISASTER CENTERS .....	1,770		1,770
244	0708047S	DEFENSE PROPERTY ACCOUNTABILITY SYSTEM .....	1,805		1,805
246	1105219BB	MQ-9 UAV .....	18,403		18,403
248	1160403BB	AVIATION SYSTEMS .....	184,993		184,993
249	1160405BB	INTELLIGENCE SYSTEMS DEVELOPMENT .....	10,625		10,625
250	1160408BB	OPERATIONAL ENHANCEMENTS .....	102,307		102,307
251	1160431BB	WARRIOR SYSTEMS .....	46,942		46,942
252	1160432BB	SPECIAL PROGRAMS .....	2,479		2,479
253	1160434BB	UNMANNED ISR .....	27,270		27,270
254	1160480BB	SOF TACTICAL VEHICLES .....	1,121		1,121
255	1160483BB	MARITIME SYSTEMS .....	42,471		42,471
256	1160489BB	GLOBAL VIDEO SURVEILLANCE ACTIVITIES .....	4,780		4,780
257	1160490BB	OPERATIONAL ENHANCEMENTS INTELLIGENCE .....	12,176		12,176
258	1203610K	TELEPORT PROGRAM .....	2,323		2,323
		<b>SUBTOTAL OPERATIONAL SYSTEM DEVELOPMENT .....</b>	<b>4,973,946</b>	<b>12,000</b>	<b>4,985,946</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, DW .....</b>	<b>22,016,553</b>	<b>399,038</b>	<b>22,415,591</b>
		<b>OPERATIONAL TEST &amp; EVAL, DEFENSE</b>			
		<b>MANAGEMENT SUPPORT</b>			
1	06051180TE	OPERATIONAL TEST AND EVALUATION .....	85,685		85,685
2	06051310TE	LIVE FIRE TEST AND EVALUATION .....	64,332		64,332
3	06058140TE	OPERATIONAL TEST ACTIVITIES AND ANALYSES .....	70,992	10,900	81,892
		Increase for test and evaluation technologies .....		[10,900]	
		<b>SUBTOTAL MANAGEMENT SUPPORT .....</b>	<b>221,009</b>	<b>10,900</b>	<b>231,909</b>
		<b>TOTAL OPERATIONAL TEST &amp; EVAL, DEFENSE .....</b>	<b>221,009</b>	<b>10,900</b>	<b>231,909</b>

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
			91,056,950	1,159,588	92,216,538
		TOTAL RDT&E .....			

**SEC. 4202. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS.**

**SEC. 4202. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, ARMY</b>			
		<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>			
56	0603327A	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING .....	1,000		1,000
58	0603627A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV .....	1,500		1,500
61	0603747A	SOLDIER SUPPORT AND SURVIVABILITY .....	3,000		3,000
76	0604117A	MANEUVER—SHORT RANGE AIR DEFENSE (M-SHORAD) .....	23,000		23,000
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES .....</b>	<b>28,500</b>	<b>0</b>	<b>28,500</b>
		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>			
88	0604328A	TRACTOR CAGE .....	12,000		12,000
100	0604741A	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE—ENG DEV .....	119,300		119,300
125	0605032A	TRACTOR TIRE .....	66,760		66,760
128	0605035A	COMMON INFRARED COUNTERMEASURES (CIRCUM) .....	2,670		2,670
136	0605051A	AIRCRAFT SURVIVABILITY DEVELOPMENT .....	34,933		34,933
147	0303032A	TROJAN—RH12 .....	1,200		1,200
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION .....</b>	<b>236,863</b>	<b>0</b>	<b>236,863</b>
		<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>			
184	0607131A	WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS .....	2,548		2,548
185	0607133A	TRACTOR SMOKE .....	7,780		7,780
206	0203801A	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM .....	2,000		2,000
209	0205402A	INTEGRATED BASE DEFENSE—OPERATIONAL SYSTEM DEV .....	8,000		8,000
216	0303028A	SECURITY AND INTELLIGENCE ACTIVITIES .....	23,199		23,199
226	0305206A	AIRBORNE RECONNAISSANCE SYSTEMS .....	14,000		14,000

**SEC. 4202. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
231	0307665A	BIOMETRICS ENABLED INTELLIGENCE .....	2,214		2,214
		<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>59,741</b>	<b>0</b>	<b>59,741</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, ARMY .....</b>	<b>325,104</b>	<b>0</b>	<b>325,104</b>
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, NAVY</b>			
		<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>			
41	0603527N	RETRACT LARCH .....	18,000		18,000
61	0603654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT .....	13,900		13,900
74	0603795N	LAND ATTACK TECHNOLOGY .....	1,400		1,400
		<b>SUBTOTAL ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES .....</b>	<b>33,300</b>	<b>0</b>	<b>33,300</b>
		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>			
149	0604755N	SHIP SELF DEFENSE (DETECT & CONTROL) .....	1,100		1,100
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION .....</b>	<b>1,100</b>	<b>0</b>	<b>1,100</b>
		<b>CLASSIFIED PROGRAMS .....</b>	<b>117,282</b>		<b>117,282</b>
		<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>			
236	0206313M	MARINE CORPS COMMUNICATIONS SYSTEMS .....	16,130		16,130
		<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>133,412</b>	<b>0</b>	<b>133,412</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, NAVY .....</b>	<b>167,812</b>	<b>0</b>	<b>167,812</b>
		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVAL, AF</b>			
		<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>			
65	1206438F	SPACE CONTROL TECHNOLOGY .....	1,100		1,100
70	1206857F	OPERATIONALLY RESPONSIVE SPACE .....	12,395		12,395

			<b>13,495</b>	<b>0</b>	<b>13,495</b>
			188,127		188,127
			4,500		4,500
			4,000		4,000
			1,000		1,000
			42,349		42,349
			1,200		1,200
			3,000		3,000
			22,100		22,100
			29,500		29,500
			5,000		5,000
			<b>300,776</b>	<b>0</b>	<b>300,776</b>
			314,271	<b>0</b>	<b>314,271</b>
					53
					35
			25,000		25,000
			13,648		13,648
			<b>38,648</b>	<b>0</b>	<b>38,648</b>
			242,668	<b>0</b>	242,668
			<b>242,668</b>	<b>0</b>	<b>242,668</b>
			192,131		192,131
			3,632		3,632
			11,040		11,040
			11,700		11,700

**SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES .....**

**CLASSIFIED PROGRAMS .....**

**OPERATIONAL SYSTEMS DEVELOPMENT**

186	9999999999	0205219F	MQ-9 UAV .....		4,500
187		0205671F	JOINT COUNTER RCIED ELECTRONIC WARFARE .....		4,000
188		0207131F	A-10 SQUADRONS .....		1,000
217		0207610F	BATTLEFIELD ABN COMM NODE (BACN) .....		42,349
228		0208288F	INTEL DATA APPLICATIONS .....		1,200
254		0305111F	WEATHER SERVICE .....		3,000
268		0305202F	DRAGON U-2 .....		22,100
272		0305208F	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS .....		29,500
310		1202247F	AF TENCAP .....		5,000
			<b>SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT .....</b>	<b>0</b>	<b>300,776</b>

**TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, AF .....**

**RESEARCH, DEVELOPMENT, TEST & EVAL, DW**

**ADVANCED TECHNOLOGY DEVELOPMENT**

24	0603122D&Z		COMBATING TERRORISM TECHNOLOGY SUPPORT .....		25,000
26	0603134BR		COUNTER IMPROVISED-THREAT SIMULATION .....		13,648
			<b>SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT .....</b>	<b>0</b>	<b>38,648</b>

**ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES**

**COUNTER IMPROVISED-THREAT DEMONSTRATION, PROTOTYPE DEVELOPMENT, AND TESTING .....**

**SUBTOTAL ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES .....**

**CLASSIFIED PROGRAMS .....**

**OPERATIONAL SYSTEM DEVELOPMENT**

250	9999999999	1160408BB	OPERATIONAL ENHANCEMENTS .....		3,632
251		1160431BB	WARRIOR SYSTEMS .....		11,040
253		1160434BB	UNMANNED ISR .....		11,700

**SEC. 4202. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Program Element	Item	FY 2019 Request	Senate Change	Senate Authorized
254	1160480BB	SOF TACTICAL VEHICLES .....	725		725
		<b>SUBTOTAL OPERATIONAL SYSTEM DEVELOPMENT .....</b>	<b>219,228</b>	<b>0</b>	<b>219,228</b>
		<b>TOTAL RESEARCH, DEVELOPMENT, TEST &amp; EVAL, DW .....</b>	<b>500,544</b>	<b>0</b>	<b>500,544</b>
		<b>TOTAL RDT&amp;E .....</b>	<b>1,307,731</b>	<b>0</b>	<b>1,307,731</b>

**TITLE XLIII—OPERATION AND MAINTENANCE**

# TITLE XLIII—OPERATION AND MAINTENANCE

## SEC. 4301. OPERATION AND MAINTENANCE.

### SEC. 4301. OPERATION AND MAINTENANCE (In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
<b>OPERATION &amp; MAINTENANCE, ARMY</b>				
<b>OPERATING FORCES</b>				
010	MANEUVER UNITS .....	2,076,360		2,076,360
020	MODULAR SUPPORT BRIGADES .....	107,946		107,946
030	ECHELONS ABOVE BRIGADE .....	732,485		732,485
040	THEATER LEVEL ASSETS .....	1,169,508		1,169,508
050	LAND FORCES OPERATIONS SUPPORT .....	1,180,460		1,180,460
060	AVIATION ASSETS .....	1,467,500		1,467,500
070	FORCE READINESS OPERATIONS SUPPORT .....	4,285,211		4,285,211
080	LAND FORCES SYSTEMS READINESS .....	482,201		482,201
090	LAND FORCES DEPOT MAINTENANCE .....	1,536,851		1,536,851
100	BASE OPERATIONS SUPPORT .....	8,274,299		8,274,299
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	3,516,859		3,516,859
120	MANAGEMENT AND OPERATIONAL HEADQUARTERS .....	438,733		438,733
180	US AFRICA COMMAND .....	231,518		231,518
190	US EUROPEAN COMMAND .....	150,268		150,268
200	US SOUTHERN COMMAND .....	195,964	14,300	210,264
	SOUTHCOM ABN GFE Sensor (GEOINT/SIGINT) .....		[4,200]	
	SOUTHCOM Cyber HUMINT (CME/OPS) .....		[1,000]	
	SOUTHCOM OSINT/PAI (CME/LIC/TOOLS) .....		[1,600]	
	SOUTHCOM Overland Airborne ISR Flight Hours .....		[7,200]	

210	SOUTHCOM SIGINT Suite COMSAT RF .....			[300]	
	US FORCES KOREA .....	59,625			59,625
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>25,905,788</b>		<b>14,300</b>	<b>25,920,088</b>
	<b>MOBILIZATION</b>				
220	STRATEGIC MOBILITY .....	370,941			370,941
230	ARMY PREPOSITIONED STOCKS .....	573,560			573,560
240	INDUSTRIAL PREPAREDNESS .....	7,678			7,678
	<b>SUBTOTAL MOBILIZATION</b> .....	<b>952,179</b>		<b>0</b>	<b>952,179</b>
	<b>TRAINING AND RECRUITING</b>				
250	OFFICER ACQUISITION .....	135,832			135,832
260	RECRUIT TRAINING .....	54,819			54,819
270	ONE STATION UNIT TRAINING .....	69,599			69,599
280	SENIOR RESERVE OFFICERS TRAINING CORPS .....	518,998			518,998
290	SPECIALIZED SKILL TRAINING .....	1,020,073			1,020,073
300	FLIGHT TRAINING .....	1,082,190			1,082,190
310	PROFESSIONAL DEVELOPMENT EDUCATION .....	220,399			220,399
320	TRAINING SUPPORT .....	611,482			611,482
330	RECRUITING AND ADVERTISING .....	698,962			698,962
	Marketing Cuts .....		-200,000		
	EXAMINING .....		[ -200,000]		
340	OFF-DUTY AND VOLUNTARY EDUCATION .....	162,049			162,049
350	CIVILIAN EDUCATION AND TRAINING .....	215,622			215,622
360	JUNIOR RESERVE OFFICER TRAINING CORPS .....	176,914			176,914
370	<b>SUBTOTAL TRAINING AND RECRUITING</b> .....	<b>5,141,369</b>		<b>-200,000</b>	<b>4,941,369</b>
	<b>CLASSIFIED PROGRAMS</b> .....				
	<b>ADMIN &amp; SRWIDE ACTIVITIES</b>				
	CLASSIFIED PROGRAMS .....	1,259,622			1,259,622

SEC. 4301. OPERATION AND MAINTENANCE  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
390	SERVICEWIDE TRANSPORTATION .....	588,047		588,047
400	CENTRAL SUPPLY ACTIVITIES .....	931,462		931,462
410	LOGISTIC SUPPORT ACTIVITIES .....	696,114		696,114
420	AMMUNITION MANAGEMENT .....	461,637		461,637
430	ADMINISTRATION .....	447,564		447,564
440	SERVICEWIDE COMMUNICATIONS .....	2,069,127		2,069,127
450	MANPOWER MANAGEMENT .....	261,021		261,021
460	OTHER PERSONNEL SUPPORT .....	379,541		379,541
470	OTHER SERVICE SUPPORT .....	1,699,767		1,699,767
480	ARMY CLAIMS ACTIVITIES .....	192,686		192,686
490	REAL ESTATE MANAGEMENT .....	240,917		240,917
500	FINANCIAL MANAGEMENT AND AUDIT READINESS .....	291,569		291,569
510	INTERNATIONAL MILITARY HEADQUARTERS .....	442,656		442,656
520	MISC. SUPPORT OF OTHER NATIONS .....	48,251		48,251
	<b>SUBTOTAL ADMIN &amp; SRVWIDE ACTIVITIES .....</b>	<b>10,009,981</b>	<b>0</b>	<b>10,009,981</b>
	<b>UNDISTRIBUTED</b>			
1	UNDISTRIBUTED .....	0	-200,000	-200,000
	Army misrepresentation of civilian pay budget request .....		(-200,000)	
	<b>SUBTOTAL UNDISTRIBUTED .....</b>	<b>0</b>	<b>-200,000</b>	<b>-200,000</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ARMY .....</b>	<b>42,009,317</b>	<b>-385,700</b>	<b>41,623,617</b>
	<b>OPERATION &amp; MAINTENANCE, ARMY RES OPERATING FORCES</b>			

010	MODULAR SUPPORT BRIGADES .....	13,867	13,867
020	ECHELONS ABOVE BRIGADE .....	536,438	536,438
030	THEATER LEVEL ASSETS .....	113,225	113,225
040	LAND FORCES OPERATIONS SUPPORT .....	551,141	551,141
050	AVIATION ASSETS .....	89,073	89,073
060	FORCE READINESS OPERATIONS SUPPORT .....	409,531	409,531
070	LAND FORCES SYSTEMS READINESS .....	101,411	101,411
080	LAND FORCES DEPOT MAINTENANCE .....	60,114	60,114
090	BASE OPERATIONS SUPPORT .....	595,728	595,728
100	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	304,658	304,658
110	MANAGEMENT AND OPERATIONAL HEADQUARTERS .....	22,175	22,175
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>2,797,361</b>	<b>2,797,361</b>

	<b>ADMIN &amp; SRWD ACTIVITIES</b>		
120	SERVICEWIDE TRANSPORTATION .....	11,832	11,832
130	ADMINISTRATION .....	18,218	18,218
140	SERVICEWIDE COMMUNICATIONS .....	25,069	25,069
150	MANPOWER MANAGEMENT .....	6,248	6,248
160	RECRUITING AND ADVERTISING .....	58,181	58,181
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES .....</b>	<b>119,548</b>	<b>119,548</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ARMY RES .....</b>	<b>2,916,909</b>	<b>2,916,909</b>

	<b>OPERATION &amp; MAINTENANCE, ARNG</b>		
	<b>OPERATING FORCES</b>		
010	MANEUVER UNITS .....	810,269	810,269
020	MODULAR SUPPORT BRIGADES .....	193,402	193,402
030	ECHELONS ABOVE BRIGADE .....	753,815	753,815
040	THEATER LEVEL ASSETS .....	84,124	84,124
050	LAND FORCES OPERATIONS SUPPORT .....	31,881	31,881

**SEC. 4301. OPERATION AND MAINTENANCE**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
060	AVIATION ASSETS .....	973,874		973,874
070	FORCE READINESS OPERATIONS SUPPORT .....	784,086		784,086
080	LAND FORCES SYSTEMS READINESS .....	51,353		51,353
090	LAND FORCES DEPOT MAINTENANCE .....	221,633		221,633
100	BASE OPERATIONS SUPPORT .....	1,129,942		1,129,942
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	919,947		919,947
120	MANAGEMENT AND OPERATIONAL HEADQUARTERS .....	1,010,524		1,010,524
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>6,964,850</b>	<b>0</b>	<b>6,964,850</b>
<b>ADMIN &amp; SRVWD ACTIVITIES</b>				
130	SERVICEWIDE TRANSPORTATION .....	10,017		10,017
140	ADMINISTRATION .....	72,746		72,746
150	SERVICEWIDE COMMUNICATIONS .....	83,105		83,105
160	MANPOWER MANAGEMENT .....	10,678		10,678
170	OTHER PERSONNEL SUPPORT .....	254,753		254,753
180	REAL ESTATE MANAGEMENT .....	3,146		3,146
	<b>SUBTOTAL ADMIN &amp; SRVWD ACTIVITIES .....</b>	<b>434,445</b>	<b>0</b>	<b>434,445</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ARNG .....</b>	<b>7,399,295</b>	<b>0</b>	<b>7,399,295</b>
<b>OPERATION &amp; MAINTENANCE, NAVY</b>				
	<b>OPERATING FORCES</b>			
010	MISSION AND OTHER FLIGHT OPERATIONS .....	5,372,399		5,372,399
020	FLEET AIR TRAINING .....	2,023,351		2,023,351
030	AVIATION TECHNICAL DATA & ENGINEERING SERVICES .....	56,225		56,225

040	AIR OPERATIONS AND SAFETY SUPPORT .....	156,081
050	AIR SYSTEMS SUPPORT .....	682,379
060	AIRCRAFT DEPOT MAINTENANCE .....	1,253,756
070	AIRCRAFT DEPOT OPERATIONS SUPPORT .....	66,649
080	AVIATION LOGISTICS .....	939,368
090	MISSION AND OTHER SHIP OPERATIONS .....	4,439,566
100	SHIP OPERATIONS SUPPORT & TRAINING .....	997,663
110	SHIP DEPOT MAINTENANCE .....	8,751,526
120	SHIP DEPOT OPERATIONS SUPPORT .....	2,168,876
130	COMBAT COMMUNICATIONS AND ELECTRONIC WARFARE .....	1,351,293
	SOUTHCOM CCO Sensor Integration .....	1,700
		[1,700]
150	SPACE SYSTEMS AND SURVEILLANCE .....	215,255
160	WARFARE TACTICS .....	632,446
170	OPERATIONAL METEOROLOGY AND OCEANOGRAPHY .....	373,046
180	COMBAT SUPPORT FORCES .....	1,452,075
190	EQUIPMENT MAINTENANCE AND DEPOT OPERATIONS SUPPORT .....	153,719
210	COMBATANT COMMANDERS CORE OPERATIONS .....	63,039
220	COMBATANT COMMANDERS DIRECT MISSION SUPPORT .....	89,339
230	MILITARY INFORMATION SUPPORT OPERATIONS .....	8,475
240	CYBERSPACE ACTIVITIES .....	424,088
260	FLEET BALLISTIC MISSILE .....	1,361,947
280	WEAPONS MAINTENANCE .....	823,952
290	OTHER WEAPON SYSTEMS SUPPORT .....	494,101
300	ENTERPRISE INFORMATION .....	921,936
	General reduction .....	-45,000
		[-45,000]
310	SUSTAINMENT, RESTORATION AND MODERNIZATION .....	2,040,389
	FSRM to 100% max executable .....	406,000
		[406,000]
320	BASE OPERATING SUPPORT .....	4,414,753
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>362,700</b>

**MOBILIZATION**

42,088,692

SEC. 4301. OPERATION AND MAINTENANCE  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
330	SHIP PREPOSITIONING AND SURGE .....	549,142		549,142
340	READY RESERVE FORCE .....	310,805		310,805
360	SHIP ACTIVATIONS/INACTIVATIONS .....	161,150		161,150
370	EXPEDITIONARY HEALTH SERVICES SYSTEMS .....	120,338		120,338
390	COAST GUARD SUPPORT .....	24,097		24,097
	<b>SUBTOTAL MOBILIZATION .....</b>	<b>1,165,532</b>	<b>0</b>	<b>1,165,532</b>
	<b>TRAINING AND RECRUITING</b>			
400	OFFICER ACQUISITION .....	145,481		145,481
410	RECRUIT TRAINING .....	9,637		9,637
420	RESERVE OFFICERS TRAINING CORPS .....	149,687		149,687
430	SPECIALIZED SKILL TRAINING .....	879,557		879,557
450	PROFESSIONAL DEVELOPMENT EDUCATION .....	184,436		184,436
460	TRAINING SUPPORT .....	223,159		223,159
470	RECRUITING AND ADVERTISING .....	181,086		181,086
480	OFF-DUTY AND VOLUNTARY EDUCATION .....	96,006		96,006
490	CIVILIAN EDUCATION AND TRAINING .....	72,083		72,083
500	JUNIOR ROTC .....	54,156		54,156
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>1,995,288</b>	<b>0</b>	<b>1,995,288</b>
	<b>CLASSIFIED PROGRAMS</b>			
	<b>ADMIN &amp; SRVWD ACTIVITIES</b>			
510	ADMINISTRATION .....	574,994		574,994
530	CIVILIAN MANPOWER AND PERSONNEL MANAGEMENT .....	1,089,964		1,089,964
540	MILITARY MANPOWER AND PERSONNEL MANAGEMENT .....	164,074		164,074
		418,350		418,350

580	SERVICEWIDE TRANSPORTATION .....	167,106	167,106
600	PLANNING, ENGINEERING, AND PROGRAM SUPPORT .....	333,556	333,556
610	ACQUISITION, LOGISTICS, AND OVERSIGHT .....	663,690	663,690
650	INVESTIGATIVE AND SECURITY SERVICES .....	705,087	705,087
	<b>SUBTOTAL ADMIN &amp; SRVWD ACTIVITIES .....</b>	<b>4,116,821</b>	<b>0</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, NAVY .....</b>	<b>49,003,633</b>	<b>362,700</b>

<b>OPERATION &amp; MAINTENANCE, MARINE CORPS</b>			
<b>OPERATING FORCES</b>			
010	OPERATIONAL FORCES .....	873,320	873,320
020	FIELD LOGISTICS .....	1,094,187	1,094,187
030	DEPOT MAINTENANCE .....	314,182	314,182
040	MARITIME PREPOSITIONING .....	98,136	98,136
050	CYBERSPACE ACTIVITIES .....	183,546	183,546
060	SUSTAINMENT, RESTORATION & MODERNIZATION .....	832,636	832,636
070	BASE OPERATING SUPPORT .....	2,151,390	2,151,390
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>5,547,397</b>	<b>0</b>

<b>TRAINING AND RECRUITING</b>			
080	RECRUIT TRAINING .....	16,453	16,453
090	OFFICER ACQUISITION .....	1,144	1,144
100	SPECIALIZED SKILL TRAINING .....	106,360	106,360
110	PROFESSIONAL DEVELOPMENT EDUCATION .....	46,096	46,096
120	TRAINING SUPPORT .....	389,751	389,751
130	RECRUITING AND ADVERTISING .....	201,662	201,662
140	OFF-DUTY AND VOLUNTARY EDUCATION .....	32,461	32,461
150	JUNIOR ROTC .....	24,217	24,217
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>818,144</b>	<b>0</b>

SEC. 4301. OPERATION AND MAINTENANCE  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	CLASSIFIED PROGRAMS .....	50,859		50,859
	<b>ADMIN &amp; SRWD ACTIVITIES</b>			
160	SERVICEWIDE TRANSPORTATION .....	29,735		29,735
170	ADMINISTRATION .....	386,375		386,375
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES</b> .....	<b>466,969</b>	<b>0</b>	<b>466,969</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, MARINE CORPS</b> .....	<b>6,832,510</b>	<b>0</b>	<b>6,832,510</b>
	<b>OPERATION &amp; MAINTENANCE, NAVY RES</b>			
	<b>OPERATING FORCES</b>			
010	MISSION AND OTHER FLIGHT OPERATIONS .....	569,584		569,584
020	INTERMEDIATE MAINTENANCE .....	6,902		6,902
030	AIRCRAFT DEPOT MAINTENANCE .....	109,776		109,776
040	AIRCRAFT DEPOT OPERATIONS SUPPORT .....	538		538
050	AVIATION LOGISTICS .....	18,888		18,888
060	SHIP OPERATIONS SUPPORT & TRAINING .....	574		574
070	COMBAT COMMUNICATIONS .....	17,561		17,561
080	COMBAT SUPPORT FORCES .....	121,070		121,070
090	CYBERSPACE ACTIVITIES .....	337		337
100	ENTERPRISE INFORMATION .....	23,964		23,964
110	SUSTAINMENT, RESTORATION AND MODERNIZATION .....	36,356		36,356
120	BASE OPERATING SUPPORT .....	103,562		103,562
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>1,009,112</b>	<b>0</b>	<b>1,009,112</b>

	<b>ADMIN &amp; SRVWD ACTIVITIES</b>		
130	ADMINISTRATION .....	1,868	1,868
140	MILITARY MANPOWER AND PERSONNEL MANAGEMENT .....	12,849	12,849
160	ACQUISITION AND PROGRAM MANAGEMENT .....	3,177	3,177
	<b>SUBTOTAL ADMIN &amp; SRVWD ACTIVITIES</b> .....	<b>17,894</b>	<b>17,894</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, NAVY RES</b> .....	<b>1,027,006</b>	<b>1,027,006</b>

	<b>OPERATION &amp; MAINTENANCE, MC RESERVE</b>		
	<b>OPERATING FORCES</b>		
010	OPERATING FORCES .....	99,173	99,173
020	DEPOT MAINTENANCE .....	19,430	19,430
030	SUSTAINMENT, RESTORATION AND MODERNIZATION .....	39,962	39,962
040	BASE OPERATING SUPPORT .....	101,829	101,829
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>260,394</b>	<b>260,394</b>

	<b>ADMIN &amp; SRVWD ACTIVITIES</b>		
050	ADMINISTRATION .....	11,176	11,176
	<b>SUBTOTAL ADMIN &amp; SRVWD ACTIVITIES</b> .....	<b>11,176</b>	<b>11,176</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, MC RESERVE</b> .....	<b>271,570</b>	<b>271,570</b>

	<b>OPERATION &amp; MAINTENANCE, AIR FORCE</b>		
	<b>CLASSIFIED PROGRAMS</b>		
	<b>OPERATING FORCES</b>		
010	PRIMARY COMBAT FORCES .....	758,178	783,178
	Increase for F-35 sustainment to accelerate depot component repair capability .....	25,000	[25,000]
020	COMBAT ENHANCEMENT FORCES .....	1,509,027	1,509,027
030	AIR OPERATIONS TRAINING (OJT, MAINTAIN SKILLS) .....	1,323,330	1,323,330

SEC. 4301. OPERATION AND MAINTENANCE  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
040	DEPOT PURCHASE EQUIPMENT MAINTENANCE .....	3,511,830		3,511,830
050	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	2,892,705	25,000	2,917,705
	Additional demo .....		[25,000]	
060	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT .....	7,613,084	645,900	8,258,984
	Increase for JSTARS buy-back .....		[95,900]	
	WSS to 100% executable .....		[550,000]	
070	FLYING HOUR PROGRAM .....	4,345,208	50,000	4,395,208
	Increase for JSTARS buy-back .....		[50,000]	
080	BASE SUPPORT .....	5,989,215		5,989,215
090	GLOBAL C3I AND EARLY WARNING .....	928,023		928,023
100	OTHER COMBAT OPS SPT PROGRAMS .....	1,080,956		1,080,956
110	CYBERSPACE ACTIVITIES .....	879,032		879,032
130	LAUNCH FACILITIES .....	183,777		183,777
140	SPACE CONTROL SYSTEMS .....	404,072		404,072
170	US NORTHCOM/NORAD .....	187,375		187,375
180	US STRATCOM .....	529,902		529,902
190	US CYBERCOM .....	329,474		329,474
200	US CENTCOM .....	166,024		166,024
210	US SOCOM .....	723		723
220	US TRANSCOM .....	535		535
918	UNDISTRIBUTED .....	0	156,800	156,800
	Procurement of 7 DABs for PACOM .....		[156,800]	
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>33,797,280</b>	<b>902,700</b>	<b>34,699,980</b>
230	<b>MOBILIZATION</b> .....			
	AIRLIFT OPERATIONS .....	1,307,695		1,307,695

240	MOBILIZATION PREPAREDNESS .....	144,417	144,417
	<b>SUBTOTAL MOBILIZATION .....</b>	<b>0</b>	<b>1,452,112</b>
	<b>TRAINING AND RECRUITING</b>		
280	OFFICER ACQUISITION .....	133,187	133,187
290	RECRUIT TRAINING .....	25,041	25,041
300	RESERVE OFFICERS TRAINING CORPS (ROTC) .....	117,338	117,338
330	SPECIALIZED SKILL TRAINING .....	401,996	401,996
340	FLIGHT TRAINING .....	477,064	477,064
350	PROFESSIONAL DEVELOPMENT EDUCATION .....	276,423	276,423
360	TRAINING SUPPORT .....	95,948	95,948
380	RECRUITING AND ADVERTISING .....	154,530	154,530
390	EXAMINING .....	4,132	4,132
400	OFF-DUTY AND VOLUNTARY EDUCATION .....	223,150	223,150
410	CIVILIAN EDUCATION AND TRAINING .....	209,497	209,497
420	JUNIOR ROTC .....	59,908	59,908
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>0</b>	<b>2,178,214</b>
	<b>CLASSIFIED PROGRAMS</b> .....		
	<b>ADMIN &amp; SRWD ACTIVITIES</b>		
430	LOGISTICS OPERATIONS .....	681,788	681,788
440	TECHNICAL SUPPORT ACTIVITIES .....	117,812	117,812
480	ADMINISTRATION .....	953,102	953,102
490	SERVICEWIDE COMMUNICATIONS .....	358,389	358,389
500	OTHER SERVICEWIDE ACTIVITIES .....	1,194,862	1,194,862
510	CIVIL AIR PATROL .....	29,594	29,594
540	INTERNATIONAL SUPPORT .....	74,959	74,959
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES .....</b>	<b>0</b>	<b>4,632,962</b>

**SEC. 4301. OPERATION AND MAINTENANCE**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>TOTAL OPERATION &amp; MAINTENANCE, AIR FORCE</b> .....	<b>42,060,568</b>	<b>902,700</b>	<b>42,963,268</b>
	<b>OPERATION &amp; MAINTENANCE, AF RESERVE</b>			
	<b>OPERATING FORCES</b>			
010	PRIMARY COMBAT FORCES .....	1,853,437		1,853,437
020	MISSION SUPPORT OPERATIONS .....	205,369		205,369
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE .....	345,576		345,576
040	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	120,736	2,800	123,536
	Additional demo .....		[2,800]	
050	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT .....	241,239	52,000	293,239
	WSS to 91% .....		[52,000]	
060	BASE SUPPORT .....	385,922		385,922
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>3,152,279</b>	<b>54,800</b>	<b>3,207,079</b>
	<b>ADMINISTRATION AND SERVICEWIDE ACTIVITIES</b>			
070	ADMINISTRATION .....	71,188		71,188
080	RECRUITING AND ADVERTISING .....	19,429		19,429
090	MILITARY MANPOWER AND PERS MGMT (ARPC) .....	9,386		9,386
100	OTHER PERS SUPPORT (DISABILITY COMP) .....	7,512		7,512
110	AUDIOVISUAL .....	440		440
	<b>SUBTOTAL ADMINISTRATION AND SERVICEWIDE ACTIVITIES</b> .....	<b>107,955</b>	<b>0</b>	<b>107,955</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, AF RESERVE</b> .....	<b>3,260,234</b>	<b>54,800</b>	<b>3,315,034</b>
	<b>OPERATION &amp; MAINTENANCE, ANG</b>			

010	<b>OPERATING FORCES</b>				
	AIRCRAFT OPERATIONS .....	2,619,940	1,600	2,621,540	
	Restoring O&M associated with buyback of 3 PMAI JSTARS aircraft .....		[1,600]		
020	MISSION SUPPORT OPERATIONS .....	623,265		623,265	
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE .....	748,287		748,287	
040	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	303,792		303,792	
050	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT .....	1,061,759		1,061,759	
060	BASE SUPPORT .....	988,333	11,000	999,333	
	PFAS Transfer .....		[11,000]		
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>6,345,376</b>	<b>12,600</b>	<b>6,357,976</b>	
	<b>ADMINISTRATION AND SERVICE-WIDE ACTIVITIES</b>				
070	ADMINISTRATION .....	45,711		45,711	
080	RECRUITING AND ADVERTISING .....	36,535		36,535	
	<b>SUBTOTAL ADMINISTRATION AND SERVICE-WIDE ACTIVITIES</b> .....	<b>82,246</b>	<b>0</b>	<b>82,246</b>	
	<b>TOTAL OPERATION &amp; MAINTENANCE, ANG</b> .....	<b>6,427,622</b>	<b>12,600</b>	<b>6,440,222</b>	
	<b>OPERATION AND MAINTENANCE, DEFENSE-WIDE</b>				
	<b>OPERATING FORCES</b>				
010	JOINT CHIEFS OF STAFF .....	430,215	2,500	432,715	
	Operational logistics exercise elements .....		[2,500]		
020	JOINT CHIEFS OF STAFF—CEZT2 .....	602,186		602,186	
040	SPECIAL OPERATIONS COMMAND/OPERATING FORCES .....	5,389,250		5,389,250	
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>6,421,651</b>	<b>2,500</b>	<b>6,424,151</b>	
	<b>TRAINING AND RECRUITING</b>				
050	DEFENSE ACQUISITION UNIVERSITY .....	181,601		181,601	
060	JOINT CHIEFS OF STAFF .....	96,565		96,565	

SEC. 4301. OPERATION AND MAINTENANCE  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
070	SPECIAL OPERATIONS COMMAND/TRAINING AND RECRUITING .....	370,583		370,583
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>648,749</b>	<b>0</b>	<b>648,749</b>
	CLASSIFIED PROGRAMS .....	15,645,192		15,645,192
	<b>ADMIN &amp; SRWIDE ACTIVITIES</b>			
080	CIVIL MILITARY PROGRAMS .....	166,131		166,131
100	DEFENSE CONTRACT AUDIT AGENCY .....	625,633		625,633
110	DEFENSE CONTRACT MANAGEMENT AGENCY .....	1,465,354		1,465,354
120	DEFENSE HUMAN RESOURCES ACTIVITY .....	859,923		859,923
130	DEFENSE INFORMATION SYSTEMS AGENCY .....	2,106,930		2,106,930
150	DEFENSE LEGAL SERVICES AGENCY .....	27,403		27,403
160	DEFENSE LOGISTICS AGENCY .....	379,275		379,275
170	DEFENSE MEDIA ACTIVITY .....	207,537		207,537
180	DEFENSE PERSONNEL ACCOUNTING AGENCY .....	130,696		130,696
190	DEFENSE SECURITY COOPERATION AGENCY .....	754,711		754,711
200	DEFENSE SECURITY SERVICE .....	789,175	63,600	852,775
	Additional civilian FTE .....		[18,600]	
	New mission needs .....		[45,000]	
220	DEFENSE TECHNOLOGY SECURITY ADMINISTRATION .....	34,951		34,951
230	DEFENSE THREAT REDUCTION AGENCY .....	553,329		553,329
250	DEPARTMENT OF DEFENSE EDUCATION ACTIVITY .....	2,892,284	50,000	2,942,284
	Impact aid for children with severe disabilities .....		[10,000]	
	Impact aid for schools with military dependent students .....		[40,000]	
260	MISSILE DEFENSE AGENCY .....	499,817		499,817
280	OFFICE OF ECONOMIC ADJUSTMENT .....	70,035		70,035
290	OFFICE OF THE SECRETARY OF DEFENSE .....	1,519,655	46,000	1,565,655

300	CDC Health Study (sec. 312)				
010	Clearinghouse		[10,000]		
	Defense Environmental International Cooperations (DEIC)		[1,000]		
	Defense Fellows Program		[1,000]		
	DOD emerging contaminants		[10,000]		
	DOD environmental resilience		[1,000]		
	DOD Rewards Program Cut		[1,000]		
	Readiness and Environmental Protection Initiative Increase		[-3,000]		
	SPECIAL OPERATIONS COMMAND/ADMIN & SVC-WIDE ACTIVITIES	97,787	[25,000]		97,787
	WASHINGTON HEADQUARTERS SERVICES	456,407			456,407
310	<b>SUBTOTAL ADMIN &amp; SRVWIDE ACTIVITIES</b>	<b>29,282,225</b>	<b>159,600</b>		<b>29,441,825</b>
	<b>TOTAL OPERATION AND MAINTENANCE, DEFENSE-WIDE</b>	<b>36,352,625</b>	<b>162,100</b>		<b>36,514,725</b>
	<b>MISCELLANEOUS APPROPRIATIONS</b>				
	<b>US COURT OF APPEALS FOR ARMED FORCES, DEF</b>				
010	US COURT OF APPEALS FOR THE ARMED FORCES, DEFENSE	14,662			14,662
	<b>SUBTOTAL US COURT OF APPEALS FOR ARMED FORCES, DEF</b>	<b>14,662</b>	<b>0</b>		<b>14,662</b>
	<b>OVERSEAS HUMANITARIAN, DISASTER, AND CIVIC AID</b>				
010	OVERSEAS HUMANITARIAN, DISASTER AND CIVIC AID	107,663			107,663
	<b>SUBTOTAL OVERSEAS HUMANITARIAN, DISASTER, AND CIVIC AID</b>	<b>107,663</b>	<b>0</b>		<b>107,663</b>
	<b>COOPERATIVE THREAT REDUCTION ACCOUNT</b>				
010	FORMER SOVIET UNION (FSU) THREAT REDUCTION	335,240			335,240
	<b>SUBTOTAL COOPERATIVE THREAT REDUCTION ACCOUNT</b>	<b>335,240</b>	<b>0</b>		<b>335,240</b>
	<b>DOD ACQUISITION WORKFORCE DEVELOPMENT FUND</b>				

51  
553

**SEC. 4301. OPERATION AND MAINTENANCE**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
010	ACQ WORKFORCE DEV FD .....	400,000		400,000
	<b>SUBTOTAL DOD ACQUISITION WORKFORCE DEVELOPMENT FUND .....</b>	<b>400,000</b>	<b>0</b>	<b>400,000</b>
060	<b>ENVIRONMENTAL RESTORATION, ARMY</b>			
	ENVIRONMENTAL RESTORATION, ARMY .....	203,449		203,449
	<b>SUBTOTAL ENVIRONMENTAL RESTORATION, ARMY .....</b>	<b>203,449</b>	<b>0</b>	<b>203,449</b>
080	<b>ENVIRONMENTAL RESTORATION, NAVY</b>			
	ENVIRONMENTAL RESTORATION, NAVY .....	329,253		329,253
	<b>SUBTOTAL ENVIRONMENTAL RESTORATION, NAVY .....</b>	<b>329,253</b>	<b>0</b>	<b>329,253</b>
100	<b>ENVIRONMENTAL RESTORATION, AIR FORCE</b>			
	ENVIRONMENTAL RESTORATION, AIR FORCE .....	296,808	-11,000	285,808
	PFAS Transfer .....		(-11,000)	
	<b>SUBTOTAL ENVIRONMENTAL RESTORATION, AIR FORCE .....</b>	<b>296,808</b>	<b>-11,000</b>	<b>285,808</b>
120	<b>ENVIRONMENTAL RESTORATION, DEFENSE</b>			
	ENVIRONMENTAL RESTORATION, DEFENSE .....	8,926		8,926
	<b>SUBTOTAL ENVIRONMENTAL RESTORATION, DEFENSE .....</b>	<b>8,926</b>	<b>0</b>	<b>8,926</b>
140	<b>ENVIRONMENTAL RESTORATION FORMERLY USED SITES</b>			
	ENVIRONMENTAL RESTORATION FORMERLY USED SITES .....	212,346		212,346

554



**SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS.**

**SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>OPERATION &amp; MAINTENANCE, ARMY</b>			
	<b>OPERATING FORCES</b>			
010	MANEUVER UNITS .....	1,179,339		1,179,339
030	ECHELONS ABOVE BRIGADE .....	25,983		25,983
040	THEATER LEVEL ASSETS .....	2,189,916		2,189,916
050	LAND FORCES OPERATIONS SUPPORT .....	188,609		188,609
060	AVIATION ASSETS .....	120,787		120,787
070	FORCE READINESS OPERATIONS SUPPORT .....	3,867,286		3,867,286
080	LAND FORCES SYSTEMS READINESS .....	550,068		550,068
090	LAND FORCES DEPOT MAINTENANCE .....	195,873		195,873
100	BASE OPERATIONS SUPPORT .....	109,560		109,560
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION .....	60,807		60,807
140	ADDITIONAL ACTIVITIES .....	5,992,222		5,992,222
150	COMMANDERS EMERGENCY RESPONSE PROGRAM .....	10,000		10,000
160	RESET .....	1,036,454		1,036,454
180	US AFRICA COMMAND .....	248,796		248,796
190	US EUROPEAN COMMAND .....	98,127		98,127
200	US SOUTHERN COMMAND .....	2,550		2,550
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>15,876,377</b>	<b>0</b>	<b>15,876,377</b>
	<b>MOBILIZATION</b>			
230	ARMY PREPOSITIONED STOCKS .....	158,753		158,753
	<b>SUBTOTAL MOBILIZATION</b> .....	<b>158,753</b>	<b>0</b>	<b>158,753</b>

390	CLASSIFIED PROGRAMS .....	1,074,270	1,074,270
	<b>ADMIN &amp; SRVWIDE ACTIVITIES</b> .....		
	SERVICEWIDE TRANSPORTATION .....	712,230	712,230
400	CENTRAL SUPPLY ACTIVITIES .....	44,168	44,168
410	LOGISTIC SUPPORT ACTIVITIES .....	5,300	5,300
420	AMMUNITION MANAGEMENT .....	38,597	38,597
460	OTHER PERSONNEL SUPPORT .....	109,019	109,019
490	REAL ESTATE MANAGEMENT .....	191,786	191,786
	<b>SUBTOTAL ADMIN &amp; SRVWIDE ACTIVITIES</b> .....	<b>2,175,370</b>	<b>2,175,370</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ARMY</b> .....	<b>18,210,500</b>	<b>18,210,500</b>

557

020	<b>OPERATION &amp; MAINTENANCE, ARMY RES</b> .....		
	<b>OPERATING FORCES</b> .....		
	ECHELONS ABOVE BRIGADE .....	20,700	20,700
060	FORCE READINESS OPERATIONS SUPPORT .....	700	700
090	BASE OPERATIONS SUPPORT .....	20,487	20,487
	<b>SUBTOTAL OPERATING FORCES</b> .....	<b>41,887</b>	<b>41,887</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ARMY RES</b> .....	<b>41,887</b>	<b>41,887</b>

010	<b>OPERATION &amp; MAINTENANCE, ARNG</b> .....		
	<b>OPERATING FORCES</b> .....		
	MANEUVER UNITS .....	42,519	42,519
020	MODULAR SUPPORT BRIGADES .....	778	778
030	ECHELONS ABOVE BRIGADE .....	12,093	12,093
040	THEATER LEVEL ASSETS .....	708	708
060	AVIATION ASSETS .....	28,135	28,135





**SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
110	SHIP DEPOT MAINTENANCE .....	1,022,647		1,022,647
130	COMBAT COMMUNICATIONS AND ELECTRONIC WARFARE .....	59,553		59,553
160	WARFARE TACTICS .....	16,651		16,651
170	OPERATIONAL METEOROLOGY AND OCEANOGRAPHY .....	31,118		31,118
180	COMBAT SUPPORT FORCES .....	635,560		635,560
190	EQUIPMENT MAINTENANCE AND DEPOT OPERATIONS SUPPORT .....	4,334		4,334
220	COMBATANT COMMANDERS DIRECT MISSION SUPPORT .....	24,800		24,800
240	CYBERSPACE ACTIVITIES .....	355		355
280	WEAPONS MAINTENANCE .....	493,033		493,033
290	OTHER WEAPON SYSTEMS SUPPORT .....	12,780		12,780
310	SUSTAINMENT, RESTORATION AND MODERNIZATION .....	67,321		67,321
320	BASE OPERATING SUPPORT .....	211,394		211,394
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>4,418,623</b>	<b>0</b>	<b>4,418,623</b>
<b>MOBILIZATION</b>				
370	EXPEDITIONARY HEALTH SERVICES SYSTEMS .....	12,902		12,902
390	COAST GUARD SUPPORT .....	165,000		165,000
	<b>SUBTOTAL MOBILIZATION .....</b>	<b>177,902</b>	<b>0</b>	<b>177,902</b>
<b>TRAINING AND RECRUITING</b>				
430	SPECIALIZED SKILL TRAINING .....	51,138		51,138
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>51,138</b>	<b>0</b>	<b>51,138</b>
	CLASSIFIED PROGRAMS .....	16,076		16,076

	<b>ADMIN &amp; SRWD ACTIVITIES</b>		
510	ADMINISTRATION .....	4,145	4,145
540	MILITARY MANPOWER AND PERSONNEL MANAGEMENT .....	7,503	7,503
580	SERVICEWIDE TRANSPORTATION .....	69,297	69,297
610	ACQUISITION, LOGISTICS, AND OVERSIGHT .....	10,912	10,912
650	INVESTIGATIVE AND SECURITY SERVICES .....	1,559	1,559
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES .....</b>	<b>109,492</b>	<b>109,492</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, NAVY .....</b>	<b>4,757,155</b>	<b>4,757,155</b>
	<b>OPERATION &amp; MAINTENANCE, MARINE CORPS</b>		
	<b>OPERATING FORCES</b>		
010	OPERATIONAL FORCES .....	734,505	734,505
020	FIELD LOGISTICS .....	212,691	212,691
030	DEPOT MAINTENANCE .....	53,040	53,040
070	BASE OPERATING SUPPORT .....	23,047	23,047
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>1,023,283</b>	<b>1,023,283</b>
	<b>TRAINING AND RECRUITING</b>		
120	TRAINING SUPPORT .....	30,459	30,459
	<b>SUBTOTAL TRAINING AND RECRUITING .....</b>	<b>30,459</b>	<b>30,459</b>
	<b>CLASSIFIED PROGRAMS</b>		
	<b>ADMIN &amp; SRWD ACTIVITIES</b>		
160	SERVICEWIDE TRANSPORTATION .....	61,400	61,400
170	ADMINISTRATION .....	2,108	2,108
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES .....</b>	<b>68,158</b>	<b>68,158</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, MARINE CORPS .....</b>	<b>1,121,900</b>	<b>1,121,900</b>

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>OPERATION &amp; MAINTENANCE, NAVY RES</b>			
	<b>OPERATING FORCES</b>			
020	INTERMEDIATE MAINTENANCE .....	500		500
030	AIRCRAFT DEPOT MAINTENANCE .....	11,400		11,400
080	COMBAT SUPPORT FORCES .....	13,737		13,737
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>25,637</b>	<b>0</b>	<b>25,637</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, NAVY RES .....</b>	<b>25,637</b>	<b>0</b>	<b>25,637</b>
	<b>OPERATION &amp; MAINTENANCE, MC RESERVE</b>			
	<b>OPERATING FORCES</b>			
010	OPERATING FORCES .....	2,550		2,550
040	BASE OPERATING SUPPORT .....	795		795
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>3,345</b>	<b>0</b>	<b>3,345</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, MC RESERVE .....</b>	<b>3,345</b>	<b>0</b>	<b>3,345</b>
	<b>OPERATION &amp; MAINTENANCE, AIR FORCE</b>			
	<b>OPERATING FORCES</b>			
010	PRIMARY COMBAT FORCES .....	166,274		166,274
020	COMBAT ENHANCEMENT FORCES .....	1,492,580		1,492,580
030	AIR OPERATIONS TRAINING (OJT, MAINTAIN SKILLS) .....	110,237		110,237
040	DEPOT PURCHASE EQUIPMENT MAINTENANCE .....	209,996		209,996



**SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	CLASSIFIED PROGRAMS .....	51,108		51,108
	<b>ADMIN &amp; SRWD ACTIVITIES</b>			
430	LOGISTICS OPERATIONS .....	154,485		154,485
440	TECHNICAL SUPPORT ACTIVITIES .....	13,608		13,608
480	ADMINISTRATION .....	4,814		4,814
490	SERVICEWIDE COMMUNICATIONS .....	131,123		131,123
500	OTHER SERVICEWIDE ACTIVITIES .....	97,471		97,471
540	INTERNATIONAL SUPPORT .....	240		240
	<b>SUBTOTAL ADMIN &amp; SRWD ACTIVITIES .....</b>	<b>452,849</b>	<b>0</b>	<b>452,849</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, AIR FORCE .....</b>	<b>9,285,789</b>	<b>0</b>	<b>9,285,789</b>
	<b>OPERATION &amp; MAINTENANCE, AF RESERVE</b>			
	<b>OPERATING FORCES</b>			
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE .....	51,000		51,000
060	BASE SUPPORT .....	9,500		9,500
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>60,500</b>	<b>0</b>	<b>60,500</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, AF RESERVE .....</b>	<b>60,500</b>	<b>0</b>	<b>60,500</b>
	<b>OPERATION &amp; MAINTENANCE, ANG</b>			
	<b>OPERATING FORCES</b>			
020	MISSION SUPPORT OPERATIONS .....	3,560		3,560

060	BASE SUPPORT .....	12,310	12,310
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>15,870</b>	<b>15,870</b>
		<b>0</b>	<b>0</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE, ANG .....</b>	<b>15,870</b>	<b>15,870</b>
	<b>OPERATION AND MAINTENANCE, DEFENSE-WIDE</b>		
	<b>OPERATING FORCES</b>		
010	JOINT CHIEFS OF STAFF .....	28,671	28,671
040	SPECIAL OPERATIONS COMMAND/OPERATING FORCES .....	3,733,161	3,733,161
	<b>SUBTOTAL OPERATING FORCES .....</b>	<b>3,761,832</b>	<b>3,761,832</b>
		<b>0</b>	<b>0</b>
	<b>CLASSIFIED PROGRAMS .....</b>	<b>1,944,813</b>	<b>1,944,813</b>
	<b>ADMIN &amp; SRWIDE ACTIVITIES</b>		
100	DEFENSE CONTRACT AUDIT AGENCY .....	1,781	1,781
110	DEFENSE CONTRACT MANAGEMENT AGENCY .....	21,723	21,723
130	DEFENSE INFORMATION SYSTEMS AGENCY .....	111,702	111,702
150	DEFENSE LEGAL SERVICES AGENCY .....	127,023	127,023
170	DEFENSE MEDIA ACTIVITY .....	14,377	14,377
190	DEFENSE SECURITY COOPERATION AGENCY .....	2,208,442	1,658,442
	Coalition Support Funds .....		
230	DEFENSE THREAT REDUCTION AGENCY .....	302,250	302,250
250	DEPARTMENT OF DEFENSE EDUCATION ACTIVITY .....	31,620	31,620
290	OFFICE OF THE SECRETARY OF DEFENSE .....	16,579	16,579
310	WASHINGTON HEADQUARTERS SERVICES .....	7,766	7,766
	<b>SUBTOTAL ADMIN &amp; SRWIDE ACTIVITIES .....</b>	<b>4,788,076</b>	<b>4,238,076</b>
		<b>-550,000</b>	<b>-550,000</b>
	<b>TOTAL OPERATION AND MAINTENANCE, DEFENSE-WIDE .....</b>	<b>8,549,908</b>	<b>7,999,908</b>
		<b>-550,000</b>	<b>-550,000</b>
	<b>TOTAL OPERATION &amp; MAINTENANCE .....</b>	<b>47,382,670</b>	<b>46,832,670</b>



**TITLE XLIV—MILITARY PERSONNEL**

# TITLE XLIV—MILITARY PERSONNEL

## SEC. 4401. MILITARY PERSONNEL.

### SEC. 4401. MILITARY PERSONNEL (In Thousands of Dollars)

Item	FY 2019 Request	Senate Change	Senate Authorized
<b>MILITARY PERSONNEL</b>			
<b>MILITARY PERSONNEL APPROPRIATIONS</b>			
MILITARY PERSONNEL APPROPRIATIONS .....	140,689,301	-3,062,080	137,627,221
End strength cut .....		[-993,200]	
Foreign Currency Fluctuation .....		[-133,000]	
JROTC .....		1,220	
Military Personnel Underexecution .....		[-1,937,100]	
<b>SUBTOTAL MILITARY PERSONNEL APPROPRIATIONS</b> .....	<b>140,689,301</b>	<b>-3,062,080</b>	<b>137,627,221</b>
<b>MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS</b>			
MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS .....	7,533,090		7,533,090
<b>SUBTOTAL MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS</b> .....	<b>7,533,090</b>		<b>7,533,090</b>
<b>TOTAL MILITARY PERSONNEL</b> .....	<b>148,222,391</b>	<b>-3,062,080</b>	<b>145,160,311</b>

**SEC. 4402. MILITARY PERSONNEL FOR OVERSEAS CONTINGENCY OPERATIONS.**

SEC. 4402. MILITARY PERSONNEL FOR OVERSEAS CONTINGENCY OPERATIONS (In Thousands of Dollars)				
Item	FY 2019 Request	Senate Change	Senate Authorized	
<b>MILITARY PERSONNEL</b>				
<b>MILITARY PERSONNEL APPROPRIATIONS</b>				
MILITARY PERSONNEL APPROPRIATIONS .....	4,660,661		4,660,661	
<b>SUBTOTAL MILITARY PERSONNEL APPROPRIATIONS</b> .....	<b>4,660,661</b>	<b>0</b>	<b>4,660,661</b>	
<b>TOTAL MILITARY PERSONNEL</b> .....	<b>4,660,661</b>	<b>0</b>	<b>4,660,661</b>	



**TITLE XLV—OTHER AUTHORIZATIONS**

# TITLE XLV—OTHER AUTHORIZATIONS

## SEC. 4501. OTHER AUTHORIZATIONS.

### SEC. 4501. OTHER AUTHORIZATIONS (In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>WORKING CAPITAL FUND</b>			
	<b>WORKING CAPITAL FUND, ARMY</b>			
	<b>WORKING CAPITAL FUND, ARMY</b>			
010	Industrial Operations .....	59,002		59,002
020	Supply Management—Army .....	99,763		99,763
	<b>SUBTOTAL WORKING CAPITAL FUND, ARMY</b> .....	<b>59,002</b>	<b>0</b>	<b>59,002</b>
	<b>SUBTOTAL WORKING CAPITAL FUND, ARMY</b> .....	<b>99,763</b>	<b>0</b>	<b>99,763</b>
	<b>WORKING CAPITAL FUND, AIR FORCE</b>			
	<b>Supplies and Materials</b> .....	69,054		69,054
020	<b>SUBTOTAL WORKING CAPITAL FUND, AIR FORCE</b> .....	<b>69,054</b>	<b>0</b>	<b>69,054</b>
	<b>WORKING CAPITAL FUND, DEFENSE-WIDE</b>			
	<b>Supply Chain Management—Def</b> .....	48,096		48,096
020	<b>SUBTOTAL WORKING CAPITAL FUND, DEFENSE-WIDE</b> .....	<b>48,096</b>	<b>0</b>	<b>48,096</b>
	<b>WORKING CAPITAL FUND, DECA</b>			
	<b>Working Capital Fund, DECA</b> .....	1,266,200		1,266,200
010	<b>SUBTOTAL WORKING CAPITAL FUND, DECA</b> .....	<b>1,266,200</b>	<b>0</b>	<b>1,266,200</b>
	<b>TOTAL WORKING CAPITAL FUND</b> .....	<b>1,542,115</b>	<b>0</b>	<b>1,542,115</b>



**SEC. 4501. OTHER AUTHORIZATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>TOTAL DRUG INTERDICTION &amp; CTR-DRUG ACTIVITIES, DEF</b>	<b>787,525</b>	<b>0</b>	<b>787,525</b>
	<b>OFFICE OF THE INSPECTOR GENERAL</b>			
	<b>OPERATION AND MAINTENANCE</b>			
010	Office of the Inspector General	327,611		327,611
	<b>SUBTOTAL OPERATION AND MAINTENANCE</b>	<b>327,611</b>	<b>0</b>	<b>327,611</b>
	<b>RD&amp;E</b>			
020	Office of the Inspector General	1,602		1,602
	<b>SUBTOTAL RD&amp;E</b>	<b>1,602</b>	<b>0</b>	<b>1,602</b>
	<b>PROCUREMENT</b>			
030	Office of the Inspector General	60		60
	<b>SUBTOTAL PROCUREMENT</b>	<b>60</b>	<b>0</b>	<b>60</b>
	<b>TOTAL OFFICE OF THE INSPECTOR GENERAL</b>	<b>329,273</b>	<b>0</b>	<b>329,273</b>
	<b>DEFENSE HEALTH PROGRAM</b>			
	<b>OPERATION &amp; MAINTENANCE</b>			
010	In-House Care	9,738,569		9,738,569
020	Private Sector Care	15,103,735		15,103,735
030	Consolidated Health Support	2,107,961		2,107,961
040	Information Management	2,039,878		2,039,878
050	Management Activities	307,629		307,629
060	Education and Training	759,278	2,500	759,278
	Specialized medical pilot program		[2,500]	

070	Base Operations/Communications .....	2,090,845	2,090,845
	<b>SUBTOTAL OPERATION &amp; MAINTENANCE .....</b>	<b>2,500</b>	<b>32,147,895</b>
	<b>RD&amp;E</b>		
080	R&D Research .....	11,386	11,386
090	R&D Exploratory Development .....	75,010	75,010
100	R&D Advanced Development .....	275,258	275,258
110	R&D Demonstration/Validation .....	117,529	117,529
120	R&D Engineering Development .....	151,985	151,985
130	R&D Management and Support .....	63,755	63,755
140	R&D Capabilities Enhancement .....	15,714	15,714
	<b>SUBTOTAL RD&amp;E .....</b>	<b>710,637</b>	<b>710,637</b>
	<b>PROCUREMENT</b>		
150	PROC Initial Outfitting .....	33,056	33,056
160	PROC Replacement & Modernization .....	343,424	343,424
180	PROC DoD Healthcare Management System Modernization .....	496,680	496,680
	<b>SUBTOTAL PROCUREMENT .....</b>	<b>873,160</b>	<b>873,160</b>
	<b>TOTAL DEFENSE HEALTH PROGRAM .....</b>	<b>2,500</b>	<b>33,731,692</b>
	<b>TOTAL OTHER AUTHORIZATIONS .....</b>	<b>2,500</b>	<b>37,384,421</b>

**SEC. 4502. OTHER AUTHORIZATIONS FOR OVERSEAS CONTINGENCY OPERATIONS.**

**SEC. 4502. OTHER AUTHORIZATIONS FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Line	Item	FY 2019 Request	Senate Change	Senate Authorized
	<b>WORKING CAPITAL FUND</b>			
	<b>WORKING CAPITAL FUND, ARMY</b>			
020	Supply Management—Army .....	6,600		6,600
	<b>SUBTOTAL WORKING CAPITAL FUND, ARMY .....</b>	<b>6,600</b>	<b>0</b>	<b>6,600</b>
	<b>WORKING CAPITAL FUND, AIR FORCE</b>			
020	Supplies and Materials .....	8,590		8,590
	<b>SUBTOTAL WORKING CAPITAL FUND, AIR FORCE .....</b>	<b>8,590</b>	<b>0</b>	<b>8,590</b>
	<b>TOTAL WORKING CAPITAL FUND .....</b>	<b>15,190</b>	<b>0</b>	<b>15,190</b>
	<b>DRUG INTERDICTION &amp; CTR-DRUG ACTIVITIES, DEF</b>			
	<b>DRUG INTERDICTION AND COUNTER DRUG ACTIVITIES</b>			
010	Drug Interdiction and Counter-Drug Activities, Defense .....	153,100		153,100
	<b>SUBTOTAL DRUG INTERDICTION AND COUNTER DRUG ACTIVITIES .....</b>	<b>153,100</b>	<b>0</b>	<b>153,100</b>
	<b>TOTAL DRUG INTERDICTION &amp; CTR-DRUG ACTIVITIES, DEF .....</b>	<b>153,100</b>	<b>0</b>	<b>153,100</b>
	<b>OFFICE OF THE INSPECTOR GENERAL</b>			
	<b>OPERATION AND MAINTENANCE</b>			
010	Office of the Inspector General .....	24,692		24,692
	<b>SUBTOTAL OPERATION AND MAINTENANCE .....</b>	<b>24,692</b>	<b>0</b>	<b>24,692</b>
	<b>TOTAL OFFICE OF THE INSPECTOR GENERAL .....</b>	<b>24,692</b>	<b>0</b>	<b>24,692</b>

	<b>DEFENSE HEALTH PROGRAM</b>		
	<b>OPERATION &amp; MAINTENANCE</b>		
010	In-House Care .....	72,627	72,627
020	Private Sector Care .....	277,066	277,066
030	Consolidated Health Support .....	2,375	2,375
	<b>SUBTOTAL OPERATION &amp; MAINTENANCE</b> .....	<b>352,068</b>	<b>352,068</b>
	<b>TOTAL DEFENSE HEALTH PROGRAM</b> .....	<b>352,068</b>	<b>352,068</b>
	<b>COUNTER-ISIS TRAIN AND EQUIP FUND</b>		
	<b>COUNTER-ISIS TRAIN AND EQUIP FUND (CTEF)</b>		
010	IRAQ .....	850,000	850,000
020	SYRIA .....	300,000	300,000
030	Other .....	250,000	250,000
	<b>SUBTOTAL COUNTER-ISIS TRAIN AND EQUIP FUND (CTEF)</b> .....	<b>1,400,000</b>	<b>1,400,000</b>
	<b>TOTAL COUNTER-ISIS TRAIN AND EQUIP FUND</b> .....	<b>1,400,000</b>	<b>1,400,000</b>
	<b>TOTAL OTHER AUTHORIZATIONS</b> .....	<b>1,945,050</b>	<b>1,945,050</b>



**TITLE XLVI—MILITARY CONSTRUCTION**

# TITLE XLVI—MILITARY CONSTRUCTION

## SEC. 4601. MILITARY CONSTRUCTION.

### SEC. 4601. MILITARY CONSTRUCTION (In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
<b>MILITARY CONSTRUCTION</b>						
ARMY	ALABAMA	Anniston Army Depot	Weapon Maintenance Shop .....	5,200		5,200
ARMY	CALIFORNIA	Fort Irwin	Multipurpose Range Complex .....	29,000		29,000
ARMY	COLORADO	Fort Carson	Vehicle Maintenance Shop .....	77,000		77,000
ARMY	GEORGIA	Fort Gordon	Cyber Instructional Fac and Network Ctr .....	99,000		99,000
ARMY	GERMANY	East Camp Grafenwoehr	Mission Training Complex .....	31,000		31,000
ARMY	HAWAII	Fort Shafter	Command and Control Facility, Incr 4 .....	105,000		105,000
ARMY	HAWAII	Wheeler Army Airfield	Rotary wing parking apron .....	0	50,000	50,000
ARMY	HONDURAS	Soto Cano AB	Barracks .....	21,000		21,000
ARMY	INDIANA	Crane Army Ammunition Activity	Railcar Holding Area .....	16,000		16,000
ARMY	KENTUCKY	Fort Campbell	Microgrid and power plant .....	0	18,000	18,000
ARMY	KENTUCKY	Fort Campbell	Vehicle Maintenance Shop .....	32,000		32,000
ARMY	KENTUCKY	Fort Knox	Digital Air/Ground Integration Range .....	26,000		26,000
ARMY	KOREA	Camp Tango	Command and Control Facility .....	17,500		17,500
ARMY	KUWAIT	Camp Arifjan	Vehicle Maintenance Shop .....	44,000		44,000
ARMY	NEW JERSEY	Picatinny Arsenal	Munitions Disassembly Complex .....	41,000		41,000
ARMY	NEW MEXICO	White Sands Missile Range	Information Systems Facility .....	40,000		40,000
ARMY	NEW YORK	West Point Military Res- ervation	Engineering Center .....	95,000		95,000

ARMY	NEW YORK	West Point Military Reservation	Parking Structure	65,000	65,000
ARMY	NORTH CAROLINA	Fort Bragg	Dining Facility	10,000	10,000
ARMY	SOUTH CAROLINA	Fort Jackson	Trainee Barracks Complex 3, Ph2	52,000	52,000
ARMY	TEXAS	Fort Bliss	Supply Support Activity	24,000	24,000
ARMY	TEXAS	Fort Hood	Supply Support Activity	0	9,600
ARMY	VIRGINIA	Arlington National Cemetery	Arlington National Cemetery Southern Expansion	0	30,000
ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Host Nation Support	34,000	34,000
ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design	71,068	71,068
ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction	72,000	72,000
ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design	5,000	5,000
<b>SUBTOTAL ARMY</b>				<b>1,011,768</b>	<b>1,119,368</b>
NAVY	ARIZONA	Camp Navajo	Missile Motor Magazines and U&SI	0	14,800
NAVY	BAHAMAS	Andros Island	AUTEC Austere Quarters	31,050	31,050
NAVY	BAHRAIN ISLAND	SW Asia	Fleet Maintenance Facility & TOC	26,340	26,340
NAVY	CALIFORNIA	Camp Pendleton	62 Area Mess Hall & Consolidated Warehouse	0	71,700
NAVY	CALIFORNIA	Camp Pendleton	Supply Warehouse SOI-West	0	16,600
NAVY	CALIFORNIA	Camp Pendleton	Potable Water Distribution Improvements	47,230	47,230
NAVY	CALIFORNIA	Camp Pendleton	AAV-ACV Maintenance & Warehouse Facility	49,410	49,410
NAVY	CALIFORNIA	Camp Pendleton	Full Motion Trainer Facility	10,670	10,670
NAVY	CALIFORNIA	Camp Pendleton	Electrical Upgrades	4,020	4,020
NAVY	CALIFORNIA	Coronado	CMW-22B Airfield Improvements	77,780	77,780
NAVY	CALIFORNIA	Lemoore	F-35 Maintenance Hangar	112,690	112,690
NAVY	CALIFORNIA	Miramar	F-35 Vertical Landing Pads and Taxiway	20,480	20,480
NAVY	CALIFORNIA	Miramar	Airfield Security Improvements	11,500	11,500
<b>SUBTOTAL NAVY</b>				<b>107,600</b>	<b>1,119,368</b>

**SEC. 4601. MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
NAVY	CALIFORNIA	Point Mugu	Directed Energy Systems Intergration Lab .....	22,150		22,150
NAVY	CALIFORNIA	San Diego	Harbor Drive Switching Station .....	48,440		48,440
NAVY	CALIFORNIA	San Diego	Pier 8 Replacement .....	108,100		108,100
NAVY	CALIFORNIA	San Nicolas Island	Missile Assembly Build & High Explosive Mag .....	31,010		31,010
NAVY	CALIFORNIA	Seal Beach	Missile Magazines .....	0	21,800	21,800
NAVY	CALIFORNIA	Seal Beach	Causeway, Boat Channel & Turning Basin .....	117,830		117,830
NAVY	DISTRICT OF COLUMBIA	Naval Observatory	Master Time Clocks & Operations Facility .....	115,600		115,600
NAVY	FLORIDA	Mayport	LCS Support Facility .....	82,350		82,350
NAVY	FLORIDA	Mayport	LCS Operational Training Facility Addition .....	29,110		29,110
NAVY	FLORIDA	MAS Whiting Field	Air Traffic Control Tower (North Field) .....	0	10,000	10,000
NAVY	GEORGIA	MCLB Albany	Welding and Body Repair Shop Facility .....	0	31,900	31,900
NAVY	GERMANY	Panzer Kaserne	MARFOREUR HQ Modernization and Expansion .....	43,950		43,950
NAVY	GUAM	Joint Region Marianas	ACE Gym & Dining .....	27,910		27,910
NAVY	GUAM	Joint Region Marianas	Earth Covered Magazines .....	52,270		52,270
NAVY	GUAM	Joint Region Marianas	Ordnance Ops .....	22,020		22,020
NAVY	GUAM	Joint Region Marianas	Machine Gun Range .....	141,287	-126,287	15,000
NAVY	GUAM	Joint Region Marianas	Unaccompanied Enlisted Housing .....	36,170		36,170
NAVY	GUANTANAMO BAY, CUBA	Guantanamo Bay	Solid Waste Management Facility .....	85,000		85,000
NAVY	HAWAII	Joint Base Pearl Harbor- Hickam	Drydock Waterfront Facility .....	45,000		45,000
NAVY	HAWAII	Kaneohe Bay	Corrosion Control Hangar .....	66,100		66,100
NAVY	HAWAII	Pearl City	Water Transmission Line .....	78,320		78,320
NAVY	JAPAN	Kadena AB	Tactical Operations Center .....	9,049		9,049
NAVY	MAINE	Kittery	Extend Portal Crane Rail .....	39,725		39,725
NAVY	MAINE	Kittery	Dry Dock #1 Superflood Basin .....	109,960		109,960
NAVY	MISSISSIPPI	Naval Construction Bat- talion Center	Expeditionary Combat Skills Student Berthing .....	0	22,300	22,300

NAVY	NORTH CAROLINA	Camp Lejeune	2nd Radio BN Complex, Phase 2	0	51,300	51,300
NAVY	NORTH CAROLINA	Cherry Point Marine Corps Air Station	Aircraft Maintenance Hangar	133,970	-106,970	27,000
NAVY	NORTH CAROLINA	Cherry Point Marine Corps Air Station	Flightline Utility Modernization	106,860		106,860
NAVY	PENNSYLVANIA	Philadelphia	Submarine Propulsor Manufacturing Support Fac	71,050		71,050
NAVY	SOUTH CAROLINA	MCAS Beaufort	Cryogenics Facility	0	6,300	6,300
NAVY	SOUTH CAROLINA	MCAS Beaufort	Recycling/Hazardous Waste Facility	9,517		9,517
NAVY	SOUTH CAROLINA	Parris Island	Range Improvements & Modernization, Phase 2	35,190		35,190
NAVY	UTAH	Hill AFB	D5 Missile Motor Receipt/Storage Facility	105,520		105,520
NAVY	VIRGINIA	Portsmouth	Ships Maintenance Facility	26,120		26,120
NAVY	VIRGINIA	Quantico	Ammunition Supply Point Upgrade, Phase 2	0	13,100	13,100
NAVY	VIRGINIA	Quantico	TBS Fire Station	21,980	-21,980	0
NAVY	WASHINGTON	Bangor	Pier and Maintenance Facility	88,960		88,960
NAVY	WASHINGTON	Whidbey Island	Fleet Support Facility	19,450		19,450
NAVY	WASHINGTON	Whidbey Island	Next Generation Jammer Facility	7,930		7,930
NAVY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction	0	25,000	25,000
NAVY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction	28,579		28,579
NAVY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design	185,542		185,542
<b>SUBTOTAL NAVY</b>				<b>2,543,189</b>	<b>29,563</b>	<b>2,572,752</b>
<b>AIR FORCE</b>						
AIR FORCE	ALASKA	Eielson AFB	F-35A School Age Facility	22,500		22,500
AIR FORCE	ALASKA	Eielson AFB	F-35A CATM Range	19,000		19,000
AIR FORCE	ALASKA	Eielson AFB	F-35 Aircraft Maintenance Unit Admin Facility	6,800		6,800
AIR FORCE	ALASKA	Eielson AFB	F-35 Conventional Munitions Maintenance Fac	15,500		15,500
AIR FORCE	ARIZONA	Davis-Monthan AFB	AGE Facility	0	15,000	15,000
AIR FORCE	ARIZONA	Luke AFB	F-35A Squad Ops #6	17,000		17,000
AIR FORCE	ARIZONA	Luke AFB	F-35A ADAL AMU B914 Sq 6	23,000		23,000

57  
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SEC. 4601. MILITARY CONSTRUCTION  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
AIR FORCE	FLORIDA	Eglin AFB	F-35A Student Dormitory II	28,000		28,000
AIR FORCE	FLORIDA	Eglin AFB	F-35A Integrated Trng Center Academics Bldg	34,863		34,863
AIR FORCE	FLORIDA	MacDill AFB	KC135 Beddown Add Flight Simulator Training	3,100		3,100
AIR FORCE	GUAM	Joint Region Marianas	Hayman Munitions Storage Igloos MSA 2	9,800		9,800
AIR FORCE	MARIANA ISLANDS	Tinian	APR—Cargo Pad with Taxiway Extension	46,000		46,000
AIR FORCE	MARIANA ISLANDS	Tinian	APR—Maintenance Support Facility	4,700		4,700
AIR FORCE	MARYLAND	Joint Base Andrews	Child Development Center	0	13,000	13,000
AIR FORCE	MARYLAND	Joint Base Andrews	PAR Relocate Haz Cargo Pad and EOD Range	37,000		37,000
AIR FORCE	MARYLAND	Joint Base Andrews	Presidential Aircraft Recap Complex, Inc. 2	154,000	-32,750	121,250
AIR FORCE	MASSACHUSETTS	Hanscom AFB	MIT-Lincoln Laboratory (West Lab CSL/MIF)	225,000	-50,000	175,000
AIR FORCE	NEBRASKA	Offutt AFB	Parking Lot, USSTRATCOM	9,500		9,500
AIR FORCE	NEVADA	Creach AFB	MQ-9 CPIP Operations & Command Center Fac.	28,000		28,000
AIR FORCE	NEVADA	Creach AFB	MQ-9 CPIP GCS Operations Facility	31,000		31,000
AIR FORCE	NEVADA	Nellis AFB	CRH Simulator	5,900		5,900
AIR FORCE	NEW MEXICO	Holloman AFB	MQ-9 FTU Ops Facility	85,000		85,000
AIR FORCE	NEW MEXICO	Kirtland AFB	Wyoming Gate Upgrade for Anti-terrorism Compliance.	0	7,000	7,000
AIR FORCE	NEW YORK	Rome Lab	Anti-Terrorism Perimeter Security / Entry Control Point.	0	14,200	14,200
AIR FORCE	NORTH DAKOTA	Minot AFB	Consolidated Helo/TRF Ops/AMU and Alert Fac	66,000		66,000
AIR FORCE	OHIO	Wright-Patterson AFB	ADAL Intelligence Production Complex (NASIC)	116,100		116,100
AIR FORCE	OKLAHOMA	Altus AFB	KC-46A FTU/FTC Simulator Facility Ph 3	12,000		12,000
AIR FORCE	OKLAHOMA	Tinker AFB	KC-46A Depot Maintenance Hangar	81,000		81,000
AIR FORCE	OKLAHOMA	Tinker AFB	KC-46A Depot Fuel Maintenance Hangar	85,000		85,000
AIR FORCE	QATAR	Al Udeid	Personnel Deployment Processing Facility	40,000		40,000
AIR FORCE	QATAR	Al Udeid	Flightline Support Facilities	30,400		30,400
AIR FORCE	SOUTH CAROLINA	Shaw AFB	CCIP MQ-9 MCE GROUP	53,000		53,000

AIR FORCE	TEXAS	Joint Base San Antonio-Lackland	BMT Recruit Dormitory 6	25,000	25,000
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A Fuel System Maintenance Dock 2 Bay	16,880	16,880
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A Parking Apron	27,431	27,431
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A AGE Facility	12,449	12,449
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A ADAL Parts Store	13,926	13,926
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A 6 Bay Hangar	39,036	39,036
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A Dorm	29,541	29,541
AIR FORCE	UNITED KINGDOM	Royal Air Force Lakenheath	F-35A ADAL Conventional Munitions MX	9,204	9,204
AIR FORCE	UTAH	Hill AFB	Composite Aircraft Antenna Calibration Fac	0	26,000
AIR FORCE	WASHINGTON	White Bluff	ADAL JPRA C2 Mission Support Facility	0	14,000
AIR FORCE	WORLDWIDE CLASSIFIED	Classified Location	TACMOR—Utilities and Infrastructure Support	18,000	18,000
AIR FORCE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning and Design	0	20,000
AIR FORCE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning and Design	195,577	195,577
AIR FORCE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning and Design	11,000	11,000
AIR FORCE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Unspecified Minor Military Construction	38,500	38,500
	<b>SUBTOTAL AIR FORCE</b>			<b>1,725,707</b>	<b>1,752,157</b>
<b>DEFENSE-WIDE</b>					
DEFENSE-WIDE	ALABAMA	Anniston Army Depot	Install microgrid	0	20,000
DEFENSE-WIDE	ALASKA	Clear AFS	Long Range Discrim Radar Sys Complex P12	174,000	130,000

**SEC. 4601. MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
DEFENSE-WIDE	ALASKA	Fort Greely	Missile Field #1 Expansion .....	8,000		8,000
DEFENSE-WIDE	ALASKA	Joint Base Elmendorf- Richardson	Operations Facility Replacement .....	14,000		14,000
DEFENSE-WIDE	ARKANSAS	Little Rock AFB	Hydrant Fuel System Alterations .....	14,000		14,000
DEFENSE-WIDE	BELGIUM	U.S. Army Garrison Ben- elux (Chievres)	Europe West District Superintendent's Office .....	14,305		14,305
DEFENSE-WIDE	CALIFORNIA	Camp Pendleton	SOF EOD Facility—West .....	3,547		3,547
DEFENSE-WIDE	CALIFORNIA	Camp Pendleton	SOF Human Performance Training Center-West .....	9,049		9,049
DEFENSE-WIDE	CALIFORNIA	Coronado	SOF NSWG-1 Operations Support Facility .....	25,172		25,172
DEFENSE-WIDE	CALIFORNIA	Coronado	SOF Close Quarters Combat Facility .....	12,768		12,768
DEFENSE-WIDE	CALIFORNIA	Coronado	SOF ATC Applied Instruction Facility .....	14,819		14,819
DEFENSE-WIDE	CALIFORNIA	Coronado	SOF ATC Training Facility .....	18,329		18,329
DEFENSE-WIDE	CALIFORNIA	Defense Distribution Depot-Tracy	Main Access Control Point Upgrades .....	18,800		18,800
DEFENSE-WIDE	CALIFORNIA	NB Ventura County	SNI Energy Storage System .....	0	6,530	6,530
DEFENSE-WIDE	COLORADO	Fort Carson	SOF Human Performance Training Center .....	15,297		15,297
DEFENSE-WIDE	COLORADO	Fort Carson	SOF Mountaineering Facility .....	9,000		9,000
DEFENSE-WIDE	CONUS CLASSIFIED	Classified Location	Battalion Complex, PH2 .....	49,222		49,222
DEFENSE-WIDE	DJIBOUTI	Camp Lemonnier	ECIP-install PV ground array .....	0	3,750	3,750
DEFENSE-WIDE	GERMANY	Baumholder	SOF Joint Parachute Rigging Facility .....	11,504		11,504
DEFENSE-WIDE	GERMANY	Kaiserslautern AB	Kaiserslautern Middle School .....	99,955		99,955
DEFENSE-WIDE	GERMANY	Rhine Ordnance Barracks	Medical Center Replacement Inc. 8 .....	319,589		319,589
DEFENSE-WIDE	GERMANY	Weisbaden	Clay Kaserne Elementary School .....	56,048		56,048
DEFENSE-WIDE	GREECE	NSA Souda Bay	Energy management control systems (EMCS) .....	0	2,230	2,230
DEFENSE-WIDE	GUAM	Naval Base Guam	P-691 NBG 74 facilities automated controls .....	0	4,634	4,634
DEFENSE-WIDE	GUANTANAMO BAY, CUBA	Guantanamo Bay	Working Dog Treatment Facility Replacement .....	9,080		9,080

DEFENSE-WIDE	HAWAII	Bellows AFB	Expand PV and provide energy resilience to fire crash rescue.	0	2,944	2,944
DEFENSE-WIDE	JAPAN	Camp McTureous	Bectel Elementary School .....	94,851		94,851
DEFENSE-WIDE	JAPAN	Iwakuni	Fuel Pier .....	33,200		33,200
DEFENSE-WIDE	JAPAN	Kadena AB	Truck Unload Facilities .....	21,400		21,400
DEFENSE-WIDE	JAPAN	Yokosuka	Kinnick High School .....	170,386	-130,386	40,000
DEFENSE-WIDE	KANSAS	Salina Training Center	PV/Water Conservation & Energy Resilience .....	0	3,500	3,500
DEFENSE-WIDE	KENTUCKY	Fort Campbell	Ft Campbell Middle School .....	62,634		62,634
DEFENSE-WIDE	KENTUCKY	Fort Campbell	SOF Logistics Support Operations Facility .....	5,435		5,435
DEFENSE-WIDE	KENTUCKY	Fort Campbell	SOF Air/Ground Integ. Urban Live Fire Range .....	9,091		9,091
DEFENSE-WIDE	KENTUCKY	Fort Campbell	SOF Multi-Use Helicopter Training Facility .....	5,138		5,138
DEFENSE-WIDE	LOUISIANA	JRB NAS New Orleans	Distribution Switchgear .....	0	5,340	5,340
DEFENSE-WIDE	MAINE	Kittery	Consolidated Warehouse Replacement .....	11,600		11,600
DEFENSE-WIDE	MARYLAND	Fort Meade	NSAW Recapitalize Building #2 Inc 4 .....	218,000	-26,400	191,600
DEFENSE-WIDE	MARYLAND	Fort Meade	NSAW Recapitalize Building #3 Inc 1 .....	99,000		99,000
DEFENSE-WIDE	MARYLAND	Fort Meade	Mission Support Operations Warehouse Facility .....	30,000		30,000
DEFENSE-WIDE	MISSOURI	St Louis	Next NGA West (N2W) Complex Phase 1 Inc. 2 .....	213,600	-163,600	50,000
DEFENSE-WIDE	MISSOURI	St Louis	Next NGA West (N2W) Complex Phase 2 Inc. 1 .....	110,000		110,000
DEFENSE-WIDE	NEW JERSEY	Joint Base McGuire-Dix-Lakehurst	Hot Cargo Hydrant System Replacement .....	10,200		10,200
DEFENSE-WIDE	NORTH CAROLINA	Fort Bragg	SOF Replace Training Maze and Tower .....	12,109		12,109
DEFENSE-WIDE	NORTH CAROLINA	Fort Bragg	SOF SERE Resistance Training Lab. Complex .....	20,257		20,257
DEFENSE-WIDE	NORTH CAROLINA	New River	Amb Care Center/Dental Clinic Replacement .....	32,580		32,580
DEFENSE-WIDE	OKLAHOMA	McAlester	Bulk Diesel System Replacement .....	7,000		7,000
DEFENSE-WIDE	SOUTH CAROLINA	MCAS Beaufort	Electrical hardening and black start CHP system .....	0	22,402	22,402
DEFENSE-WIDE	TEXAS	Camp Mabry	Install microgrid .....	0	5,500	5,500
DEFENSE-WIDE	TEXAS	Joint Base San Antonio-Lackland	Energy Aerospace Operations Facility .....	10,200		10,200
DEFENSE-WIDE	TEXAS	Red River Army Depot	General Purpose Warehouse .....	71,500		71,500
DEFENSE-WIDE	UNITED KINGDOM	Croughton RAF	Ambulatory Care Center Addition/Alteration .....	10,000	-10,000	0
DEFENSE-WIDE	VIRGINIA	Dam Neck	SOF Magazines .....	8,959		8,959
DEFENSE-WIDE	VIRGINIA	Fort A.P. Hill	Training Campus .....	11,734		11,734

**SEC. 4601. MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
DEFENSE-WIDE	VIRGINIA	Fort Belvoir	Human Performance Training Center .....	6,127		6,127
DEFENSE-WIDE	VIRGINIA	Humphreys Engineer Center	Maintenance and Supply Facility .....	20,257		20,257
DEFENSE-WIDE	VIRGINIA	Joint Base Langley-Eustis	Fuel Facilities Replacement .....	6,900		6,900
DEFENSE-WIDE	VIRGINIA	Joint Base Langley-Eustis	Ground Vehicle Fueling Facility Replacement .....	5,800		5,800
DEFENSE-WIDE	VIRGINIA	MAS Oceana	Super Flight Line Electrical Distribution System (FLEDS).	0	2,520	2,520
DEFENSE-WIDE	VIRGINIA	Pentagon	North Village VACP & Fencing .....	12,200		12,200
DEFENSE-WIDE	VIRGINIA	Pentagon	Exterior Infrastruc. & Security Improvements .....	23,650		23,650
DEFENSE-WIDE	WASHINGTON	Joint Base Lewis-McChord	Refueling Facility .....	26,200		26,200
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design—ERCIP .....	0	5,000	5,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	55,925		55,925
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	496		496
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	10,000		10,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	14,184		14,184
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	13,642		13,642
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	5,000		5,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Energy Resilience and Conserv. Invest. Prog. ....	150,000		150,000

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DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Contingency Construction	10,000	10,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction	3,000	3,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design	14,300	14,300
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	ERCIP Design	10,000	10,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Exercise Related Minor Construction	12,479	12,479
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design	2,036	2,036
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning & Design	42,705	42,705
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Unspecified Minor Construction	17,366	17,366
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning and Design	55,699	55,699
<b>SUBTOTAL DEFENSE-WIDE</b>				<b>2,693,324</b>	<b>2,403,288</b>
				<b>-290,036</b>	
<b>ARMY NATIONAL GUARD</b>					
ARMY NATIONAL GUARD	ALASKA	Joint Base Elmendorf-Richardson	United States Property & Fiscal Office	27,000	27,000
ARMY NATIONAL GUARD	ILLINOIS	Marseilles	Automated Record Fire Range	5,000	5,000
ARMY NATIONAL GUARD	MONTANA	Malta	National Guard Readiness Center	15,000	15,000
ARMY NATIONAL GUARD	NEVADA	North Las Vegas	National Guard Readiness Center	32,000	32,000
ARMY NATIONAL GUARD	NEW HAMPSHIRE	Pembroke	National Guard Readiness Center	12,000	12,000

**SEC. 4601. MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

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ARMY NATIONAL GUARD	NORTH DAKOTA	Fargo	National Guard Readiness Center .....	32,000		32,000
ARMY NATIONAL GUARD	OHIO	Camp Ravenna	Automated Multipurpose Machine Gun Range .....	7,400		7,400
ARMY NATIONAL GUARD	OKLAHOMA	Lexington	Aircraft vehicle storage building .....	0	11,000	11,000
ARMY NATIONAL GUARD	OREGON	Boardman	Tactical unmanned aerial vehicle hangar .....	0	11,000	11,000
ARMY NATIONAL GUARD	SOUTH DAKOTA	Rapid City	National Guard Readiness Center .....	15,000		15,000
ARMY NATIONAL GUARD	TEXAS	Houston	Unheated vehicle storage (aircraft) .....	0	15,000	15,000
ARMY NATIONAL GUARD	VIRGINIA	Sandston	Army aviation support facility .....	0	89,000	89,000
ARMY NATIONAL GUARD	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	18,100		18,100
ARMY NATIONAL GUARD	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	16,622		16,622
<b>SUBTOTAL ARMY NATIONAL GUARD</b>				<b>180,122</b>	<b>126,000</b>	<b>306,122</b>
<b>AIR NATIONAL GUARD</b>						
AIR NATIONAL GUARD	CALIFORNIA	Channel Islands ANG	Construct C-130J Flight Simulator Facility .....	8,000		8,000
AIR NATIONAL GUARD	HAWAII	Joint Base Pearl Harbor- Hickam	Construct Addition to F-22 LO/CRF B3408 .....	17,000		17,000

AIR NATIONAL GUARD	ILLINOIS	Gen. Wayne A. Downing Peoria International Airport	Construct New Fire Crash/Rescue Station .....	9,000	9,000
AIR NATIONAL GUARD	LOUISIANA	JRB NAS New Orleans	NORTHCOM—Construct Alert Apron .....	15,000	15,000
AIR NATIONAL GUARD	NEW YORK	Francis S. Gabreski Airport	Security Forces/Comm.Training Facility .....	20,000	20,000
AIR NATIONAL GUARD	PENNSYLVANIA	Fort Indiantown Gap	Replace Operations Training/Dining Hall .....	8,000	8,000
AIR NATIONAL GUARD	PUERTO RICO	Luis Munoz Marin International Airport	Hurricane Maria—Communications Facility .....	0	15,000
AIR NATIONAL GUARD	PUERTO RICO	Luis Munoz Marin International Airport	Hurricane Maria—Maintenance Hangar .....	0	35,000
AIR NATIONAL GUARD	VIRGINIA	Joint Base Langley-Eustis	Construct Cyber Ops Facility .....	10,000	10,000
AIR NATIONAL GUARD	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	0	4,000
AIR NATIONAL GUARD	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	23,626	23,626
AIR NATIONAL GUARD	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	Planning and Design .....	18,500	18,500
<b>SUBTOTAL AIR NATIONAL GUARD</b>				<b>129,126</b>	<b>54,000</b>
<b>ARMY RESERVE</b>					
ARMY RESERVE	CALIFORNIA	Barstow	ECS Modified TEMF / Warehouse .....	34,000	34,000
ARMY RESERVE	WISCONSIN	Fort McCoy	Transient Training Barracks .....	23,000	23,000
ARMY RESERVE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Unspecified Minor Construction .....	2,064	2,064
ARMY RESERVE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning and Design .....	5,855	5,855
<b>SUBTOTAL ARMY RESERVE</b>				<b>64,919</b>	<b>0</b>
					<b>591</b>

**SEC. 4601. MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

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<b>NAVY RESERVE</b>						
NAVY RESERVE	CALIFORNIA	Seal Beach	Reserve Training Center .....	21,740		21,740
NAVY RESERVE	GEORGIA	Benning	Reserve Training Center .....	13,630		13,630
NAVY RESERVE	WORLDWIDE	UNSPECIFIED	Unspecified Worldwide Locations .....	3,000		3,000
NAVY RESERVE	WORLDWIDE	UNSPECIFIED	Unspecified Worldwide Locations .....	4,695		4,695
<b>SUBTOTAL NAVY RESERVE</b>				<b>43,065</b>	<b>0</b>	<b>43,065</b>
<b>AIR FORCE RESERVE</b>						
AIR FORCE RESERVE	INDIANA	Grissom ARB	Aerial Port Facility .....	0	9,400	9,400
AIR FORCE RESERVE	INDIANA	Grissom ARB	Add/Alter Aircraft Maintenance Hangar .....	12,100		12,100
AIR FORCE RESERVE	MINNESOTA	Minneapolis-St Paul IAP	Small Arms Range .....	9,000		9,000
AIR FORCE RESERVE	MISSISSIPPI	Keesler AFB	Aeromedical Staging Squadron Facility .....	4,550		4,550
AIR FORCE RESERVE	NEW YORK	Niagara Falls IAP	Physical Fitness Center .....	14,000		14,000
AIR FORCE RESERVE	TEXAS	Fort Worth	Munitions Training/Admin Facility .....	3,100		3,100
AIR FORCE RESERVE	WORLDWIDE	UNSPECIFIED	Unspecified Worldwide Locations .....	0	5,000	5,000
AIR FORCE RESERVE	WORLDWIDE	UNSPECIFIED	Unspecified Worldwide Locations .....	4,055		4,055
AIR FORCE RESERVE	WORLDWIDE	UNSPECIFIED	Unspecified Worldwide Locations .....	3,358		3,358
<b>SUBTOTAL AIR FORCE RESERVE</b>				<b>50,163</b>	<b>14,400</b>	<b>64,563</b>
<b>NATO SECURITY INVESTMENT PROGRAM</b>						

NATO SECURITY IN-VESTMENT PRO-GRAM	WORLDWIDE UNSPECIFIED	NATO Security Investment Program	NATO Security Investment Program	171,064	171,064
<b>SUBTOTAL NATO SECURITY INVESTMENT PROGRAM</b>				<b>171,064</b>	<b>171,064</b>
<b>TOTAL MILITARY CONSTRUCTION</b>				<b>8,612,447</b>	<b>8,680,424</b>
<b>FAMILY HOUSING CONSTRUCTION, ARMY</b>					
CONSTRUCTION, ARMY	GERMANY	Baumholder	Family Housing Improvements	32,000	32,000
CONSTRUCTION, ARMY	ITALY	Vicenza	Family Housing New Construction	95,134	95,134
CONSTRUCTION, ARMY	KOREA	Camp Humphreys	Family Housing New Construction Incr 3	85,000	85,000
CONSTRUCTION, ARMY	KOREA	Camp Walker	Family Housing Replacement Construction	68,000	68,000
CONSTRUCTION, ARMY	PUERTO RICO	Fort Buchanan	Family Housing Replacement Construction	26,000	26,000
CONSTRUCTION, ARMY	WISCONSIN	Fort McCoy	Family Housing New Construction	6,200	6,200
CONSTRUCTION, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Family Housing P & D	18,326	18,326
<b>SUBTOTAL CONSTRUCTION, ARMY</b>				<b>330,660</b>	<b>330,660</b>
<b>OPERATION AND MAINTENANCE, ARMY</b>					
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Management	36,302	36,302
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Services	10,502	10,502

SEC. 4601, MILITARY CONSTRUCTION (In Thousands of Dollars)						
Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings .....	15,842		15,842
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Miscellaneous .....	408		408
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Maintenance .....	75,530		75,530
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities .....	57,872		57,872
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Leasing .....	161,252		161,252
OPERATION AND MAINTENANCE, ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Housing Privatization Support .....	18,801		18,801
<b>SUBTOTAL OPERATION AND MAINTENANCE, ARMY .....</b>				<b>376,509</b>	<b>0</b>	<b>376,509</b>
<b>CONSTRUCTION, NAVY AND MARINE CORPS</b>						
CONSTRUCTION, NAVY AND MA- RINE CORPS	MARIANA ISLANDS	Guam	Replace Andersen Housing PH III .....	83,441		83,441
CONSTRUCTION, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Improvements, Washington DC .....	16,638		16,638

CONSTRUCTION, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	P&D Washington DC	4,502	4,502
<b>SUBTOTAL CONSTRUCTION, NAVY AND MARINE CORPS</b>				<b>104,581</b>	<b>0</b>
<b>OPERATION AND MAINTENANCE, NAVY AND MARINE CORPS</b>					
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities	60,252	60,252
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings	16,395	16,395
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Management	50,870	50,870
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Miscellaneous	148	148
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Services	16,261	16,261
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Leasing	62,515	62,515

**SEC. 4601, MILITARY CONSTRUCTION**  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Maintenance .....	86,328		86,328
OPERATION AND MAINTENANCE, NAVY AND MA- RINE CORPS	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Housing Privatization Support .....	21,767		21,767
<b>SUBTOTAL OPERATION AND MAINTENANCE, NAVY AND MARINE CORPS</b>				<b>314,536</b>	<b>0</b>	<b>314,536</b>
<b>CONSTRUCTION, AIR FORCE</b>						<b>596</b>
CONSTRUCTION, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Construction Improvements .....	75,247		75,247
CONSTRUCTION, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Planning & Design .....	3,199		3,199
<b>SUBTOTAL CONSTRUCTION, AIR FORCE</b>				<b>78,446</b>	<b>0</b>	<b>78,446</b>
<b>OPERATION AND MAINTENANCE, AIR FORCE</b>						
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Housing Privatization .....	22,205		22,205
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities .....	48,566		48,566
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Management .....	54,423		54,423

OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Services	13,669	13,669
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings	30,645	30,645
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Miscellaneous	2,171	2,171
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Leasing	15,832	15,832
OPERATION AND MAINTENANCE, AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Maintenance	129,763	129,763
	<b>SUBTOTAL OPERATION AND MAINTENANCE, AIR FORCE</b>			<b>317,274</b>	<b>317,274</b>
					<b>597</b>
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities	4,100	4,100
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings	416	416
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities	106	106
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Leasing	13,046	13,046

SEC. 4601. MILITARY CONSTRUCTION  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Maintenance .....	121		121
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings .....	643		643
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Leasing .....	38,232		38,232
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Furnishings .....	01		01
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Services .....	02		02
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Utilities .....	09		09
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Maintenance .....	1,542		1,542
OPERATION AND MAINTENANCE, DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Management .....	155		155
<b>SUBTOTAL OPERATION AND MAINTENANCE, DEFENSE-WIDE</b>				<b>58,373</b>	<b>0</b>	<b>58,373</b>

IMPROVEMENT FUND

IMPROVEMENT FUND	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Administrative Expenses—FHIF	1,653	1,653
	<b>SUBTOTAL IMPROVEMENT FUND</b>			<b>1,653</b>	<b>0</b>
UNACCOMP HSG IMPRV FUND	WORLDWIDE UNSPECIFIED	Unaccompanied Housing Improvement Fund	Administrative Expenses—UHIF	600	600
	<b>SUBTOTAL UNACCOMP HSG IMPRV FUND</b>			<b>600</b>	<b>0</b>
	<b>TOTAL FAMILY HOUSING</b>			<b>1,582,632</b>	<b>1,582,632</b>
<b>DEFENSE BASE REALIGNMENT AND CLOSURE</b>					
ARMY	WORLDWIDE UNSPECIFIED	Base Realignment & Closure, Army	Base Realignment and Closure	62,796	62,796
NAVY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	Base Realignment & Closure	151,839	151,839
AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	DoD BRAC Activities—Air Force	52,903	52,903
	<b>TOTAL DEFENSE BASE REALIGNMENT AND CLOSURE</b>			<b>267,538</b>	<b>267,538</b>
	<b>TOTAL MILITARY CONSTRUCTION, FAMILY HOUSING, AND BRAC</b>			<b>10,462,617</b>	<b>67,977</b>
					<b>10,530,594</b>

**SEC. 4602. MILITARY CONSTRUCTION FOR OVERSEAS CONTINGENCY OPERATIONS.**

**SEC. 4602. MILITARY CONSTRUCTION FOR OVERSEAS CONTINGENCY OPERATIONS**  
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2019 Request	Senate Change	Senate Authorized
<b>MILITARY CONSTRUCTION</b>						
ARMY	BULGARIA	Nevo Selo FOS	ED: Ammunition Holding Area .....	5,200		5,200
ARMY	GUANTANAMO BAY, CUBA	Guantanamo Bay	OCO: High Value Detention Facility .....	69,000	-69,000	0
ARMY	POLAND	Drawsko Pomorski Train- ing Area	ED: Staging Areas .....	17,000		17,000
ARMY	POLAND	Powidz AB	ED: Rail Extension & Railhead .....	14,000		14,000
ARMY	POLAND	Powidz AB	ED: Ammunition Storage Facility .....	52,000		52,000
ARMY	POLAND	Powidz AB	ED: Bulk Fuel Storage .....	21,000		21,000
ARMY	POLAND	Zagan Training Area	ED: Rail Extension and Railhead .....	6,400		6,400
ARMY	POLAND	Zagan Training Area	ED: Staging Areas .....	34,000		34,000
ARMY	ROMANIA	Mihail Kogalniceanu FOS	ED: Explosives & Ammo Load/Unload Apron .....	21,651		21,651
ARMY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	ED: Planning and Design .....	20,999		20,999
<b>SUBTOTAL ARMY</b> .....				<b>261,250</b>	<b>-69,000</b>	<b>192,250</b>
<b>NAVY</b>						
NAVY	GREECE	Souda Bay	ED: Marathi Logistics Support Center .....	6,200		6,200
NAVY	GREECE	Souda Bay	ED: Joint Mobility Processing Center .....	41,650		41,650
NAVY	ITALY	Sigonella	ED: P-8A Taxiway .....	66,050		66,050
NAVY	SPAIN	Rota	ED: Port Operations Facilities .....	21,590		21,590
NAVY	UNITED KINGDOM	Lossiemouth	ED: P-8 Base Improvements .....	79,130		79,130
NAVY	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	ED: Planning and Design .....	12,700		12,700
<b>SUBTOTAL NAVY</b> .....				<b>227,320</b>	<b>0</b>	<b>227,320</b>

<b>AIR FORCE</b>						
AIR FORCE	GERMANY	Ramstein AB	ED:—KMC DABS-FEV/RH Storage Warehouses	119,000		119,000
AIR FORCE	NORWAY	Rygge AS	ED:—Construct Taxiway	13,800		13,800
AIR FORCE	SLOVAKIA	Malacky AB	ED:—Regional Munitions Storage Area	59,000		59,000
AIR FORCE	UNITED KINGDOM	RAF Fairford	ED:—Construct DABS-FEV Storage	87,000		87,000
AIR FORCE	UNITED KINGDOM	RAF Fairford	ED:—Munitions Holding Area	19,000		19,000
AIR FORCE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	ED:—Planning & Design Funds	48,000		48,000
				<b>345,800</b>	<b>0</b>	<b>345,800</b>
<b>DEFENSE-WIDE</b>						
DEFENSE-WIDE	ESTONIA	Unspecified Estonia	ED: SOF Training Facility	9,600		9,600
DEFENSE-WIDE	ESTONIA	Unspecified Estonia	ED: SOF Operations Facility	6,100		6,100
DEFENSE-WIDE	QATAR	Al Udeid	OCO: Trans-Regional Logistics Complex	60,000		60,000
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Unspecified Worldwide Locations	ED: Planning and Design	7,100		7,100
DEFENSE-WIDE	WORLDWIDE UNSPECIFIED	Various Worldwide Locations	ED: Planning and Design	4,250		4,250
				<b>87,050</b>	<b>0</b>	<b>87,050</b>
<b>TOTAL MILITARY CONSTRUCTION</b>				<b>921,420</b>	<b>-69,000</b>	<b>852,420</b>
<b>TOTAL MILITARY CONSTRUCTION, FAMILY HOUSING, AND BRAC</b>				<b>921,420</b>	<b>-69,000</b>	<b>852,420</b>



**TITLE XLVII—DEPARTMENT OF ENERGY  
NATIONAL SECURITY PROGRAMS**

# TITLE XLVII—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

## SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS.

### SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS (In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
<b>Discretionary Summary By Appropriation</b>			
<b>Energy And Water Development, And Related Agencies</b>			
<b>Appropriation Summary:</b>			
<b>Energy Programs</b>			
Nuclear Energy .....	136,090	0	136,090
<b>Atomic Energy Defense Activities</b>			
<b>National nuclear security administration:</b>			
Weapons activities .....	11,017,078	0	11,017,078
Defense nuclear nonproliferation .....	1,862,825	0	1,862,825
Naval reactors .....	1,788,618	0	1,788,618
Federal salaries and expenses .....	422,529	0	422,529
<b>Total, National nuclear security administration .....</b>	<b>15,091,050</b>	<b>0</b>	<b>15,091,050</b>
<b>Environmental and other defense activities:</b>			
Defense environmental cleanup .....	5,630,217	0	5,630,217
Other defense activities .....	853,300	0	853,300
Defense nuclear waste disposal .....	30,000	-30,000	0
<b>Total, Environmental &amp; other defense activities .....</b>	<b>6,513,517</b>	<b>-30,000</b>	<b>6,483,517</b>

<b>Total, Atomic Energy Defense Activities</b> .....	21,604,567	-30,000	21,574,567
<b>Total, Discretionary Funding</b> .....	21,740,657	-30,000	21,710,657
<b>Nuclear Energy</b>			
Idaho sitewide safeguards and security .....	136,090		136,090
<b>Total, Nuclear Energy</b> .....	<b>136,090</b>	<b>0</b>	<b>136,090</b>
<b>Weapons Activities</b>			
<b>Directed stockpile work</b>			
<b>Life extension programs and major alterations</b>			
B61 Life extension program .....	794,049	-113,888	794,049
W76 Life extension program .....	113,888	[-113,888]	0
Split into W76-1 and W76-2 lines .....			
W76-1 Life extension program .....	0	48,888	48,888
Complete W76-1 life extension .....		[48,888]	
W76-2 Warhead modification program .....	0	65,000	65,000
NPR Implementation .....		[65,000]	
W88 Alt 370 .....	304,285		304,285
W80-4 Life extension program .....	654,766		654,766
IW-1 .....	53,000		53,000
<b>Total, Life extension programs and major alterations</b> .....	<b>1,919,988</b>	<b>0</b>	<b>1,919,988</b>
<b>Stockpile systems</b>			
B61 Stockpile systems .....	64,547		64,547
W76 Stockpile systems .....	94,300		94,300
W78 Stockpile systems .....	81,329		81,329
W80 Stockpile systems .....	80,204		80,204
B83 Stockpile systems .....	35,082		35,082
W87 Stockpile systems .....	83,107		83,107
W88 Stockpile systems .....	180,913		180,913
<b>Total, Stockpile systems</b> .....	<b>619,482</b>	<b>0</b>	<b>619,482</b>

**SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS**  
(In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
<b>Weapons dismantlement and disposition</b>			
Operations and maintenance .....	56,000		56,000
<b>Stockpile services</b>			
Production support .....	512,916		512,916
Research and development support .....	38,129		38,129
R&D certification and safety .....	216,582		216,582
Management, technology, and production .....	300,736		300,736
<b>Total, Stockpile services</b> .....	<b>1,068,363</b>	<b>0</b>	<b>1,068,363</b>
<b>Strategic materials</b>			
Uranium sustainment .....	87,182		87,182
Plutonium sustainment .....	361,282		361,282
Tritium sustainment .....	205,275		205,275
Lithium sustainment .....	29,135		29,135
Domestic uranium enrichment .....	100,704		100,704
Strategic materials sustainment .....	218,794		218,794
<b>Total, Strategic materials</b> .....	<b>1,002,372</b>	<b>0</b>	<b>1,002,372</b>
<b>Total, Directed stockpile work</b> .....	<b>4,666,205</b>	<b>0</b>	<b>4,666,205</b>
<b>Research, development, test and evaluation (RD&amp;E)</b>			
<b>Science</b>			
Advanced certification .....	57,710		57,710
Primary assessment technologies .....	95,057		95,057
Dynamic materials properties .....	131,000		131,000
Advanced radiography .....	32,544		32,544
Secondary assessment technologies .....	77,553		77,553

Academic alliances and partnerships .....	53,364	53,364
Enhanced Capabilities for Subcritical Experiments .....	117,632	117,632
<b>Total, Science</b> .....	<b>0</b>	<b>564,860</b>
<b>Engineering</b>		
Enhanced surety .....	43,226	43,226
Weapon systems engineering assessment technology .....	27,536	27,536
Nuclear survivability .....	48,230	48,230
Enhanced surveillance .....	58,375	58,375
Stockpile Responsiveness .....	34,000	34,000
<b>Total, Engineering</b> .....	<b>0</b>	<b>211,367</b>
<b>Inertial confinement fusion ignition and high yield</b>		
Ignition .....	22,434	22,434
Support of other stockpile programs .....	17,397	17,397
Diagnostics, cryogenics and experimental support .....	51,453	51,453
Pulsed power inertial confinement fusion .....	8,310	8,310
Facility operations and target production .....	319,333	319,333
<b>Total, Inertial confinement fusion and high yield</b> .....	<b>0</b>	<b>418,927</b>
<b>Advanced simulation and computing</b>		
Advanced simulation and computing .....	656,401	656,401
<b>Construction:</b>		
18-D-670, Exascale Class Computer Cooling Equipment, LANL .....	24,000	24,000
18-D-620, Exascale Computing Facility Modernization Project, LLNL .....	23,000	23,000
<b>Total, Construction</b> .....	<b>0</b>	<b>47,000</b>
<b>Total, Advanced simulation and computing</b> .....	<b>0</b>	<b>703,401</b>
<b>Advanced manufacturing</b>		
Additive manufacturing .....	17,447	17,447
Component manufacturing development .....	48,477	48,477
Process technology development .....	30,914	30,914

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS  
(In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
<b>Total, Advanced manufacturing</b> .....	<b>96,838</b>	<b>0</b>	<b>96,838</b>
<b>Total, RDT&amp;E</b> .....	<b>1,995,393</b>	<b>0</b>	<b>1,995,393</b>
<b>Infrastructure and operations</b>			
Operations of facilities .....	891,000		891,000
Safety and environmental operations .....	115,000		115,000
Maintenance and repair of facilities .....	365,000		365,000
<b>Recapitalization:</b>			
Infrastructure and safety .....	431,631		431,631
Capability based investments .....	109,057		109,057
<b>Total, Recapitalization</b> .....	<b>540,688</b>	<b>0</b>	<b>540,688</b>
<b>Program increase to address high-priority deferred maintenance</b>			
<b>Construction:</b>			
19-D-670, 138kV Power Transmission System Replacement, NNS .....	6,000		6,000
19-D-660, Lithium Production Capability, Y-12 .....	19,000		19,000
18-D-650, Tritium Production Capability, SRS .....	27,000		27,000
17-D-640, U1a Complex Enhancements Project, NNS .....	53,000		53,000
16-D-515, Albuquerque complex project .....	47,953		47,953
06-D-141 Uranium processing facility Y-12, Oak Ridge, TN .....	703,000		703,000
04-D-125 Chemistry and metallurgy research facility replacement project, LANL .....	235,095		235,095
<b>Total, Construction</b> .....	<b>1,091,048</b>	<b>0</b>	<b>1,091,048</b>
<b>Total, Infrastructure and operations</b> .....	<b>3,002,736</b>	<b>0</b>	<b>3,002,736</b>
<b>Secure transportation asset</b>			
Operations and equipment .....	176,617		176,617

Program direction .....	102,022	102,022
<b>Total, Secure transportation asset .....</b>	<b>278,639</b>	<b>278,639</b>
<b>Defense nuclear security</b>		
Operations and maintenance .....	690,638	690,638
<b>Total, Defense nuclear security .....</b>	<b>690,638</b>	<b>690,638</b>
Information technology and cybersecurity .....	221,175	221,175
Legacy contractor pensions .....	162,292	162,292
<b>Total, Weapons Activities .....</b>	<b>11,017,078</b>	<b>11,017,078</b>
<b>Defense Nuclear Nonproliferation</b>		
<b>Defense Nuclear Nonproliferation Programs</b>		
<b>Global material security</b>		
International nuclear security .....	46,339	46,339
Domestic radiological security .....	90,764	90,764
International radiological security .....	59,576	59,576
Nuclear smuggling detection and deterrence .....	140,429	140,429
<b>Total, Global material security .....</b>	<b>337,108</b>	<b>337,108</b>
<b>Material management and minimization</b>		
HEU reactor conversion .....	98,300	98,300
Nuclear material removal .....	32,925	32,925
Material disposition .....	200,869	200,869
<b>Total, Material management &amp; minimization .....</b>	<b>332,094</b>	<b>332,094</b>
Nonproliferation and arms control .....	129,703	129,703
Defense nuclear nonproliferation R&D .....	456,095	456,095
<b>Nonproliferation Construction:</b>		

**SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS**  
(In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
18-D-150 Surplus Plutonium Disposition Project .....	59,000		59,000
99-D-143 Mixed Oxide (MOX) Fuel Fabrication Facility, SRS .....	220,000		220,000
<b>Total, Nonproliferation construction .....</b>	<b>279,000</b>	<b>0</b>	<b>279,000</b>
<b>Total, Defense Nuclear Nonproliferation Programs .....</b>	<b>1,534,000</b>	<b>0</b>	<b>1,534,000</b>
Legacy contractor pensions .....	28,640		28,640
Nuclear counterterrorism and incident response program .....	319,185		319,185
Use of prior year balances .....	-19,000		-19,000
<b>Total, Defense Nuclear Nonproliferation .....</b>	<b>1,862,825</b>	<b>0</b>	<b>1,862,825</b>
<b>Naval Reactors</b>			
Naval reactors development .....	514,951		514,951
Columbia-Class reactor systems development .....	138,000		138,000
S8G Prototype refueling .....	250,000		250,000
Naval reactors operations and infrastructure .....	525,764		525,764
Construction: .....	0		0
19-D-930, KS Overhead Piping .....	10,994		10,994
17-D-911, BL Fire System Upgrade .....	13,200		13,200
14-D-901 Spent fuel handling recapitalization project, NRF .....	287,000		287,000
<b>Total, Construction .....</b>	<b>311,194</b>	<b>0</b>	<b>311,194</b>
Program direction .....	48,709		48,709
<b>Total, Naval Reactors .....</b>	<b>1,788,618</b>	<b>0</b>	<b>1,788,618</b>
<b>Federal Salaries And Expenses</b>			
Program direction .....	422,529		422,529

<b>Total, Office Of The Administrator</b> .....	<b>422,529</b>	<b>0</b>	<b>422,529</b>
<b>Defense Environmental Cleanup</b>			
<b>Closure sites:</b>			
Closure sites administration .....	4,889		4,889
<b>Richland:</b>			
River corridor and other cleanup operations .....	89,577		89,577
Central plateau remediation .....	562,473		562,473
Richland community and regulatory support .....	5,121		5,121
<b>Construction:</b>			
18-D-404 WESF Modifications and Capsule Storage .....	1,000		1,000
<b>Total, Construction</b> .....	<b>1,000</b>	<b>0</b>	<b>1,000</b>
<b>Total, Hanford site</b> .....	<b>658,171</b>	<b>0</b>	<b>658,171</b>
<b>Office of River Protection:</b>			
Waste Treatment Immobilization Plant Commissioning .....	15,000		15,000
Rad liquid tank waste stabilization and disposition .....	677,460		677,460
<b>Construction:</b>			
15-D-409 Low activity waste pretreatment system, ORP .....	56,053		56,053
01-D-416 A-D WTP Subprojects A-D .....	675,000		675,000
01-D-416 E—Pretreatment Facility .....	15,000		15,000
<b>Total, Construction</b> .....	<b>746,053</b>	<b>0</b>	<b>746,053</b>
<b>Total, Office of River protection</b> .....	<b>1,438,513</b>	<b>0</b>	<b>1,438,513</b>
<b>Idaho National Laboratory:</b>			
SNF stabilization and disposition—2012 .....	17,000		17,000
Solid waste stabilization and disposition .....	148,387		148,387
Radioactive liquid tank waste stabilization and disposition .....	137,739		137,739
Soil and water remediation—2035 .....	42,900		42,900
Idaho community and regulatory support .....	3,200		3,200

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS  
(In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
<b>Total, Idaho National Laboratory</b> .....	<b>349,226</b>	<b>0</b>	<b>349,226</b>
<b>MNSA sites and Nevada off-sites</b>			
Lawrence Livermore National Laboratory .....	1,704		1,704
Nuclear facility D & D Separations Process Research Unit .....	15,000		15,000
Nevada .....	60,136		60,136
Sandia National Laboratories .....	2,600		2,600
Los Alamos National Laboratory .....	191,629		191,629
<b>Total, MNSA sites and Nevada off-sites</b> .....	<b>271,069</b>	<b>0</b>	<b>271,069</b>
<b>Oak Ridge Reservation:</b>			
<b>OR Nuclear facility D &amp; D</b>			
OR-0041—D&D—Y-12 .....	30,214		30,214
OR-0042—D&D—ORNL .....	60,007		60,007
<b>Total, OR Nuclear facility D &amp; D</b> .....	<b>90,221</b>	<b>0</b>	<b>90,221</b>
U233 Disposition Program .....	45,000		45,000
<b>OR cleanup and waste disposition</b>			
OR cleanup and disposition .....	67,000		67,000
<b>Construction:</b>			
17-D-401 On-site waste disposal facility .....	5,000		5,000
14-D-403 Outfall 200 Mercury Treatment Facility .....	11,274		11,274
<b>Total, Construction</b> .....	<b>16,274</b>	<b>0</b>	<b>16,274</b>
<b>Total, OR cleanup and waste disposition</b> .....	<b>83,274</b>	<b>0</b>	<b>83,274</b>
OR community & regulatory support .....	4,711		4,711

OR technology development and deployment .....	3,000		3,000
<b>Total, Oak Ridge Reservation</b> .....	<b>226,206</b>	<b>0</b>	<b>226,206</b>
<b>Savannah River Sites:</b>			
Nuclear Material Management .....	351,331		351,331
<b>Environmental Cleanup</b>			
Environmental Cleanup .....	166,105		166,105
<b>Construction:</b>			
18-D-402, Emergency Operations Center .....	1,259		1,259
<b>Total, Environmental Cleanup</b> .....	<b>167,364</b>	<b>0</b>	<b>167,364</b>
SR community and regulatory support .....	4,749		4,749
Radioactive liquid tank waste stabilization and disposition .....	805,686		805,686
<b>Construction:</b>			
18-D-401, SDU #8/9 .....	37,450		37,450
17-D-402—Saltstone Disposal Unit #7 .....	41,243		41,243
05-D-405 Salt waste processing facility, Savannah River Site .....	65,000		65,000
<b>Total, Construction</b> .....	<b>143,693</b>	<b>0</b>	<b>143,693</b>
<b>Total, Savannah River site</b> .....	<b>1,472,823</b>	<b>0</b>	<b>1,472,823</b>
<b>Waste Isolation Pilot Plant</b>			
Operations and maintenance .....	220,000		220,000
Central characterization project .....	19,500		19,500
Critical Infrastructure Repair/Replacement .....	46,695		46,695
Transportation .....	25,500		25,500
<b>Construction:</b>			
15-D-411 Safety significant confinement ventilation system, WIPP .....	84,212		84,212
15-D-412 Exhaust shaft, WIPP .....	1,000		1,000
<b>Total, Construction</b> .....	<b>85,212</b>	<b>0</b>	<b>85,212</b>
<b>Total, Waste Isolation Pilot Plant</b> .....	<b>396,907</b>	<b>0</b>	<b>396,907</b>

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS  
(In Thousands of Dollars)

Program	FY 2019 Request	Senate Change	Senate Authorized
Program direction .....	300,000		300,000
Program support .....	6,979		6,979
Minority Serving Institution Partnership .....	6,000		6,000
<b>Safeguards and Security</b>			
Oak Ridge Reservation .....	14,023		14,023
Paducah .....	15,577		15,577
Portsmouth .....	15,078		15,078
Richland/Hanford Site .....	86,686		86,686
Savannah River Site .....	183,357		183,357
Waste Isolation Pilot Project .....	6,580		6,580
West Valley .....	3,133		3,133
<b>Total, Safeguards and Security .....</b>	<b>324,434</b>	<b>0</b>	<b>324,434</b>
Technology development .....	25,000		25,000
HQEF-0040—Excess Facilities .....	150,000		150,000
<b>Total, Defense Environmental Cleanup .....</b>	<b>5,630,217</b>	<b>0</b>	<b>5,630,217</b>
<b>Other Defense Activities</b>			
<b>Environment, health, safety and security</b>			
Environment, health, safety and security .....	135,194		135,194
Program direction .....	70,653		70,653
<b>Total, Environment, Health, safety and security .....</b>	<b>205,847</b>	<b>0</b>	<b>205,847</b>
<b>Independent enterprise assessments</b>			
Independent enterprise assessments .....	24,068		24,068
Program direction .....	52,702		52,702
<b>Total, Independent enterprise assessments .....</b>	<b>76,770</b>	<b>0</b>	<b>76,770</b>

Specialized security activities .....	254,378	254,378
<b>Office of Legacy Management</b>		
Legacy management .....	140,575	140,575
Program direction .....	18,302	18,302
<b>Total, Office of Legacy Management</b> .....	<b>158,877</b>	<b>158,877</b>
<b>Defense related administrative support</b>		
Chief financial officer .....	48,484	48,484
Chief information officer .....	96,793	96,793
Project management oversight and Assessments .....	8,412	8,412
<b>Total, Defense related administrative support</b> .....	<b>153,689</b>	<b>153,689</b>
Office of hearings and appeals .....	5,739	5,739
<b>Subtotal, Other defense activities</b> .....	<b>855,300</b>	<b>855,300</b>
Rescission of prior year balances (OHA) .....	-2,000	-2,000
<b>Total, Other Defense Activities</b> .....	<b>853,300</b>	<b>853,300</b>
<b>Defense Nuclear Waste Disposal</b>		
Yucca mountain and interim storage .....	30,000	30,000
Program cut .....	-30,000	-30,000
<b>Total, Defense Nuclear Waste Disposal</b> .....	<b>0</b>	<b>0</b>

## **Legislative Requirements**

### **Departmental Recommendations**

Six legislative proposals on the National Defense Authorization Act for Fiscal Year 2019 were submitted as executive communications to the President of the Senate by the Assistant Secretary of Defense for Legislative Affairs of the Department of Defense and subsequently referred to the committee. Information on these executive communications appears below. These executive communications are available for review at the committee.

Executive Communication No. EC-4563

Dated March 14, 2018

Received in the Committee on Armed Services on March 14, 2018

Executive Communication No. EC-4621

Dated March 20, 2018

Received in the Committee on Armed Services on March 20, 2018

Executive Communication No. EC-4658

Dated April 10, 2018

Received in the Committee on Armed Services on April 10, 2018

Executive Communication No. EC-4784

Dated April 11, 2018

Received in the Committee on Armed Services on April 11, 2018

Executive Communication No. EC-4926

Dated April 18, 2018

Received in the Committee on Armed Services on April 18, 2018

Executive Communication No. EC-5213

Dated May 21, 2018

Received in the Committee on Armed Services on May 21, 2018

### **Committee Action**

The committee vote to report the John S. McCain National Defense Authorization Act for Fiscal Year 2019 passed by roll call vote, 25-2, as follows: In favor: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, and Peters. Opposed: Senators Gillibrand and Warren.

The other 17 roll call votes on motions and amendments to the bill which were considered during the course of the full committee markup are as follows:

1. MOTION: To conduct full committee markup of the National Defense Authorization Act for Fiscal Year 2019 in closed session because of classified and proprietary information expected to be discussed.

VOTE: Passed by roll call vote 18-7-2

In favor: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Sasse, Scott, Reed, Nelson, Donnelly, Hirono, King, and Heinrich

Opposed: Senators McCaskill, Shaheen, Gillibrand, Blumenthal, Kaine, Warren, and Peters

No Instruction: Senators Cruz and Graham

2. MOTION: To improve reimbursement by the Department of Defense of entities carrying out state vaccination programs in connection with vaccines provided to TRICARE covered beneficiaries.

VOTE: Passed by roll call vote 14–13

In favor: Senators Sullivan, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Perdue, Cruz, Graham, Sasse, and Scott

3. MOTION: To include a provision that would prohibit the Department of Defense from reducing per diem rates based on the duration of a temporary duty assignment or civilian travel.

VOTE: Passed by roll call vote 14–13

In favor: Senators Rounds, Perdue, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Cruz, Graham, Sasse, Scott, and Reed

4. MOTION: To include a provision that would establish White Sands National Park, abolish White Sands National Monument, and direct a land exchange of specific lands between the Secretary of the Interior and the Secretary of the Army.

VOTE: Passed by roll call vote 22–5

In favor: Senators McCain, Inhofe, Ernst, Tillis, Sullivan, Perdue, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators Wicker, Fischer, Cotton, Rounds, and Cruz

5. MOTION: To include a provision that would prevent the obligation or expenditure of funds related to deployment of a low-yield nuclear warhead for a submarine-launched ballistic missile pending submission of a report from the Secretary of Defense related to cost, schedule, and program implications of the development of the W76–2 warhead.

VOTE: Failed by roll call vote 11–16

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Nelson, and McCaskill

6. MOTION: To include a provision that would modify the requirement in section 3116(c) of the National Defense Authorization Act for Fiscal Year 2004 for specific authorization by Congress before commencing certain stages of development of a low-yield nuclear weapon.

VOTE: Passed by roll call vote 14–13

In favor: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, and Scott

Opposed: Senators Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

7. MOTION: To include a provision that would require the Secretary of Defense to pursue a strategy with respect to national security launch that includes reusable launch vehicles.

VOTE: Passed by roll call vote 17–10

In favor: Senators McCain, Perdue, Cruz, Graham, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Sasse, and Scott

8. MOTION: To strike a provision that repealed certain energy source-specific requirements.

VOTE: Passed by roll call vote 19–5–3

In favor: Senators Fischer, Ernst, Perdue, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Cotton, and Cruz

No Instruction: Senators Rounds, Tillis, and Sullivan

9. MOTION: To repeal the authority to transfer certain veterans memorial objects to foreign governments without specific authorization in law.

VOTE: Failed by roll call vote 12–15

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Perdue, Cruz, Graham, Sasse, and Scott

Opposed: Senators McCain, Sullivan, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

10. MOTION: To include a provision that would authorize the temporary transfer of Guantanamo Bay detainees to the United States for medical treatment that is not available at Guantanamo.

VOTE: Passed by roll call vote 14–13

In favor: Senators McCain, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, and Scott

11. MOTION: To include a provision that would direct the Missile Defense Agency to commence a space-based intercept program notwithstanding the outcome of the Missile Defense Review.

VOTE: Passed by roll call vote 16–11

In favor: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Donnelly, and King

Opposed: Senators Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, Heinrich, Warren, and Peters

12. MOTION: To place conditions on future participation of the People's Republic of China in any Rim of the Pacific naval exercise.

VOTE: Passed by roll call vote 14–13

In favor: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, and Scott

Opposed: Senators Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

13. MOTION: To include a provision that would provide authority to procure up to six polar-class heavy icebreakers.

VOTE: Passed by roll call vote 17–10

In favor: Senators Inhofe, Rounds, Ernst, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Nelson, Shaheen, Gillibrand, Donnelly, Hirono, King, Heinrich, and Peters

Opposed: Senators McCain, Wicker, Fischer, Cotton, Tillis, Reed, McCaskill, Blumenthal, Kaine, and Warren

14. MOTION: To include a provision that would authorize the Secretary of Defense, with the concurrence of the Secretary of State and in consultation with the Administrator of the U.S. Agency for International Development and the Director of the Office of Management and Budget, to provide support for the stabilization activities of other Federal agencies.

VOTE: Passed by roll call vote 21–6

In favor: Senators Fischer, Rounds, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Cotton, Ernst, and Tillis

15. MOTION: To include report language that directs the Department of Defense to implement the recommendations listed in the Government Accountability Office Report 18–206.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, and Scott

16. MOTION: To include a provision that would prohibit the use of funds for the exhibition or parade of military forces and hardware for review by the President to demonstrate military force outside of authorized military operations or activities on or after January 1, 2019.

VOTE: Failed by roll call vote 12–15

In favor: Senators Ernst, Reed, Nelson, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, and Peters

Opposed: Senators McCain, Inhofe, Wicker, Fischer, Cotton, Rounds, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, McCaskill, and Donnelly

17. MOTION: To include a provision that would waive the requirement that recreational vessels over 300 gross tons be inspected as if they were commercial vessels and require the Coast Guard to establish a large recreational vessel code to provide safety and construction standards for this category of vessels.

VOTE: Failed by roll call vote 10–17

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Sullivan, Cruz, Graham, Scott, and Nelson

Opposed: Senators McCain, Ernst, Tillis, Perdue, Sasse, Reed, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters

**Congressional Budget Office Cost Estimate**

It was not possible to include the Congressional Budget Office cost estimate on this legislation because it was not available at the time the report was filed. It will be included in material presented during Senate floor debate on the legislation.

**Regulatory Impact**

Paragraph 11(b) of rule XXVI of the Standing Rules of the Senate requires that a report on the regulatory impact of the bill be included in the report on the bill. The committee finds that there is no regulatory impact in the case of the National Defense Authorization Bill for Fiscal Year 2019.

**Changes in Existing Law**

Pursuant to the provisions of paragraph 12 of rule XXVI of the Standing Rules of the Senate, the changes in existing law made by certain portions of the bill have not been shown in this section of the report because, in the opinion of the committee, it is necessary to dispense with showing such changes in order to expedite the business of the Senate and reduce the expenditure of funds.

