

Stenographic Transcript
Before the

COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO
RECEIVE TESTIMONY ON
RESHAPING THE U.S. MILITARY

Thursday, February 16, 2017

Washington, D.C.

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6 U.S. Senate
7 Committee on Armed Services
8 Washington, D.C.
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10 The committee met, pursuant to notice, at 9:33 a.m. in
11 Room SD-G50, Dirksen Senate Office Building, Hon. John
12 McCain, chairman of the committee, presiding.

13 Committee Members Present: Senators McCain
14 [presiding], Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst,
15 Tillis, Sullivan, Perdue, Sasse, Strange, Reed, Nelson,
16 McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly,
17 Hirono, Kaine, King, Heinrich, Warren, and Peters.
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1 OPENING STATEMENT OF HON. JOHN McCAIN, U.S. SENATOR
2 FROM ARIZONA

3 Chairman McCain: Well, good morning.

4 The Senate Armed Services Committee meets this morning
5 to receive testimony on reshaping the U.S. military and make
6 America great again.

7 I would like to thank our witnesses for appearing
8 today: David Ochmanek, Senior Defense Research Analyst at
9 the RAND Corporation; James Thomas, Principal at the Telemus
10 Group; Thomas Donnelly, Resident Fellow and Co-Director of
11 the Marilyn Ware Center for Security Studies at the American
12 Enterprise Institute; and Bryan Clark, Senior Fellow at the
13 Center for Strategic and Budgetary Assessments.

14 For the last 25 years, Americans have taken our
15 Nation's military superiority for granted. We watched as
16 the Cold War ended with the collapse of our only superpower
17 rival and the so-called "end of history." We quickly grew
18 accustomed to military dominance. After all, no U.S. Navy
19 ship has been sunk in an active conflict since 1952. No
20 member of American ground forces has been killed by an enemy
21 airstrike since 1953. No American fighter aircraft has been
22 shot down in an air-to-air engagement since 1991. And every
23 one of our Nation's recent military conflicts resulted in a
24 lopsided conventional military victory from the Gulf War to
25 Bosnia and Kosovo to the early phases of the wars in

1 Afghanistan and Iraq.

2 This confidence in our military is reflected in the
3 rhetoric of many of our Nation's civilian and military
4 leaders who reassure us that ours is the most capable
5 fighting force on the face of the earth, or that our defense
6 budget is so much larger than our competitors. These
7 statements are undoubtedly true. And to be very, very
8 clear, any adversary that chooses the path of aggression
9 against the United States or its allies would, indeed, pay a
10 terrible price.

11 But ultimately such statements shed little light on the
12 most important question: whether our military can achieve
13 the mission assigned to it to deter and, if necessary,
14 defeat aggression and at what cost. The testimony of our
15 military leaders and the work of some of our foremost
16 defense experts leads me to believe there is real reason for
17 concern.

18 For the last 20 years, our adversaries have gone to
19 school on the American way of war. And with focused
20 determination, they have invested in, developed, and/or
21 fielded the capabilities to counter it: long-range,
22 accurate ballistic and cruise missiles that can target our
23 ground forces, ships, military installations, and critical
24 infrastructure; dense, integrated air defenses that pose a
25 threat to even our most advanced aircraft; large numbers of

1 modern fighter aircraft, including some fifth generation
2 platforms, armed with capable air-to-air missiles that in
3 some cases outrange our own; more advanced surveillance and
4 reconnaissance systems, resilient command and control
5 networks, electronic warfare capabilities, and anti-
6 satellite and cyber weapons that, taken together, threaten
7 our ability to achieve information dominance.

8 By expanding contested battlespace and exacerbating the
9 tyranny of distance, our adversaries are threatening our
10 military's ability to project power, upon which rests the
11 credibility of American deterrence. As they grow more
12 capable, our adversaries are increasingly emboldened to
13 engage in acts of provocation, coercion, and aggression that
14 threaten our interests and our allies.

15 Pick up this morning's paper and you will see how a
16 Russian ship is now operating off the east coast of the
17 United States.

18 Here at home, we have only exacerbated the problem. In
19 recent years, preoccupied with the fight against terrorism,
20 hampered by a broken acquisition system, and shackled by the
21 budget cuts and fiscal uncertainty, our military has
22 prioritized near-term readiness at the expense of future
23 modernization, giving our adversaries a chance to close the
24 gap. Our military leaders have described this as, quote,
25 mortgaging the future. But it appears few realized how soon

1 the future would arrive.

2 What all these developments mean is that America's
3 military advantage is eroding and eroding fast. The wide
4 margin for error we once enjoyed is gone. And in some of
5 the most difficult scenarios our military may some day
6 confront, we can no longer take victory for granted. In
7 short, we will now hear from some of our witnesses today the
8 risk is growing, that our Nation's military could lose the
9 next war it is called upon to fight. If it does prevail, as
10 I surely hope it would, success could very well come at a
11 cost in blood and treasure we as a nation have not paid
12 since the Vietnam War.

13 The question now is what we must do to reverse these
14 trends and sustain and advance America's military advantage
15 for the 21st century.

16 Yes, we need to rebuild military capacity deliberately
17 and sustainably, particularly in areas like undersea warfare
18 where our Nation still maintains an advantage over our
19 adversaries. But there is still a lot of truth in the old
20 adage that quantity has a quality all its own. But adding
21 capacity alone is not the answer. More of the same is not
22 just a bad investment against increasingly advanced
23 adversaries, it is downright dangerous.

24 That means we have to reshape our military by investing
25 in the modern capabilities necessary for the new realities

1 of deterring conflict and competing with great powers that
2 possess advanced military forces: longer-range, more
3 survivable platforms and munitions; more autonomous systems;
4 greater cyber and space capabilities, among other new
5 technologies.

6 It is not enough, however, just to acquire these new
7 technologies. We must also devise entirely new ways to
8 employ them. It would be a failure of imagination merely to
9 conform emerging defense technologies to how we operate and
10 fight today. And doing so would simply play into our
11 adversaries' hands. Ultimately, we must shape new ways of
12 operating and fighting around these new technologies.

13 The good news is that our civilian and military leaders
14 at the Department of Defense see this challenge clearly and
15 are developing solutions to address these issues. But the
16 progress they have made remains limited because of budget
17 cuts and fiscal uncertainty that prevent effective, long-
18 term strategic planning and investment. This is just one
19 more reason why we have to remove the shackles of the Budget
20 Control Act from the Department of Defense, and we have to
21 do so immediately. Rebuilding and reshaping our military
22 will not happen quickly. But the decisions we need to make
23 to realize those goals are upon us. The future is now.

24 In short, to sustain and advance America's military
25 advantage for the 21st century, we must not only rebuild our

1 military, but we must rethink, re-imagine, and reshape it.
2 This will entail tough choices. But these are the choices
3 we must make to ensure that our military will be ready to
4 deter and, if necessary, fight and win our future wars.

5 Senator Reed?

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1 STATEMENT OF HON. JACK REED, U.S. SENATOR FROM RHODE
2 ISLAND

3 Senator Reed: Well, thank you, Senator McCain, for
4 calling this very, very important hearing.

5 Also, let me thank the witnesses for being here today.
6 Thank you, gentlemen, very much.

7 The United States has relied on our military's
8 dominance in every battle sphere since the end of the Cold
9 War. We have not had a near-peer competitor for decades,
10 and that has allowed us to take for granted certain
11 fundamental aspects of projecting power and deterring and
12 defeating aggression.

13 Unfortunately, we are no longer in a position to assume
14 our air, land, naval, space, and cyber superiority against
15 potential adversaries. We are no longer able to assume that
16 we can project power from the United States instead of being
17 forward-based, and we can no longer assume that we have
18 months to mobilize and move forces uncontested to respond to
19 aggression.

20 It should also not be a surprise to anyone that 15
21 years of fighting the wars in Afghanistan and Iraq forced us
22 to make tradeoffs on long-term defense investment in order
23 to support near-term readiness and to pay the costly bills
24 from these two wars. During that time, other countries have
25 modernized and made technological advances. Now we must

1 focus on what our military needs to keep our competitive
2 edge.

3 I would also like to emphasize the need to be clear-
4 sighted about our ability to predict conflicts and
5 adversaries 15 to 20 years out. As Defense Secretary Gates
6 told West Point cadets, "When it comes to predicting the
7 nature and location of our next military engagements, since
8 Vietnam, our record has been perfect. We have never once
9 gotten it right." If past is prologue, it is very possible
10 that 20 years from now we will be facing adversaries and
11 competitive environments that we did not expect. Therefore,
12 we must ensure that our military is, above all, adaptable to
13 the new crises that lurk unseen over the horizon.

14 I hope that some of the technological innovations and
15 organizational concepts that are being explored by the
16 Defense Department will allow us to have a more effective,
17 agile, and adaptable military. But underlying all of these
18 considerations is, of course, the question, what will our
19 national security strategy look like? We should not
20 advocate for substantially higher investments that have a
21 long spending tail unless and until we have fully
22 articulated the strategy that will drive our budget. We
23 also need to carefully examine the current budgets and
24 programs of the services and agencies to ensure that they
25 are aligned to meet the threats of the future in the time

1 frames that we need.

2 One additional point that cannot be overemphasized in
3 my view. Our national defense strategy has always assumed a
4 strong NATO alliance and an unwavering commitment to our
5 allies in Asia since the end of World War II. Any
6 disruption to those assumptions will require a fundamental
7 rethinking of our strategy. Our successes in recent
8 operations are due in large part to the allies and partners
9 that stand shoulder to shoulder with our troops. Our
10 commitment to those partners and allies is essential.

11 Thank you, Mr. Chairman. I look forward to the
12 testimony.

13 Chairman McCain: I thank the witnesses for being here.
14 We will begin with you, Mr. Ochmanek.

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1 STATEMENT OF DAVID A. OCHMANEK, SENIOR DEFENSE
2 RESEARCH ANALYST, RAND CORPORATION

3 Mr. Ochmanek: Thank you, Chairman McCain, Ranking
4 Member Reed, members of the committee, and staff. I
5 appreciate the opportunity to share insights that my
6 colleagues and I have gained from our analysis of future
7 military operations. Our war games and simulations, as the
8 chairman suggested, point to the conclusion that U.S. forces
9 could fare poorly in the next war they are called upon to
10 fight. As you requested, I will focus my remarks on what
11 might be done to change these sobering projections.

12 Specifically, I would like to highlight investment
13 options that have the potential to address three important
14 operational challenges facing the U.S. forces. These are:
15 one, threats posed by long-range strike systems; two,
16 threats posed by advanced air defenses; and three, the
17 simple tyranny of distance that we face when we try to
18 project power overseas.

19 So, number one, long-range strike systems. Because our
20 adversaries are fielding large numbers of accurate ballistic
21 and cruise missiles, our land and sea bases today are
22 subject to attack as never before. There is no single
23 silver bullet solution to this problem. Currently available
24 ballistic missile defense systems are expensive and can be
25 overwhelmed by modest-sized missile salvos, and hunting down

1 mobile ballistic missiles deployed deep in enemy territory
2 is not a promising solution.

3 Our wargaming, however, points to a number of ways in
4 which we can increase the resiliency of forward bases and
5 allow them to generate sustained combat power even in the
6 face of these kinds of threats. Chief among these are:
7 one, dispersing our forces across more bases, not
8 concentrating them; two, creating uncertainty about the
9 location of our forces by deploying them in redundant low-
10 cost shelters, moving them frequently, and using decoys and
11 deception measures; three, disrupting enemy reconnaissance
12 capabilities; and four, making the bases themselves more
13 resilient, more difficult to attack and suppress often
14 through prosaic measures like rapid runway repair materials,
15 fuel bladders, and fuel pumping facilities that are more
16 survivable than the things we have today.

17 Analysis also shows that active defenses against cruise
18 missiles can be a very promising way to protect our forces
19 abroad. The Army's short-range air defense system, the
20 IFPC-2, seems particularly well suited to defeating even
21 large salvos of cruise missiles.

22 Another part of the solution will be to rely more
23 heavily on long-range bombers and submarines. Repeatedly in
24 our war games, our bombers operate relatively unscathed by
25 missile attacks, but fail to make decisive contributions to

1 the defense because they run out of suitable munitions.
2 U.S. forces could get much more capability from the existing
3 bomber fleet by expanding inventories of weapons like the
4 JASSM-ER cruise missile, the MALD, miniature air-launched
5 decoy, and accelerating the development of new weapons such
6 as anti-ship cruise missiles and swarming unmanned aerial
7 vehicles that the bombers could deliver.

8 Similarly, the Virginia class submarine has
9 unparalleled stealth capabilities and can fight from areas
10 off the coast of adversary states, but it has limited
11 weapons carrying capacity. The Virginia payload module
12 boosts this capacity, and other promising concepts such as
13 unmanned underwater vehicles that are being developed.

14 Challenge two is overcoming advanced air defenses.
15 Russia and China are fielding air defenses of such density
16 and sophistication that our forces will not have time to
17 comprehensively suppress them before going after the
18 invading forces that they need to attack. Therefore, our
19 forces need to find ways to reach into the air defense zone
20 to find and strike targets of highest priority from the
21 outset of the campaign. Three types of capabilities are
22 called for to achieve this capability.

23 One is sensors that can survive in contested
24 environments and allow us to see the battlefield from space,
25 from airborne platforms, and from land-based sensors or

1 surface-based sensors. The idea is to spread these sensor
2 networks across a number of different platform types and
3 domains so that some portion of them will be available at
4 all times.

5 Second is communication links that can effectively
6 connect sensors, control centers, and shooters even in the
7 presence of heavy jamming threats. Again, robustness will
8 be achieved here through versatility and redundancy.

9 And three, distributed networks of delivery platforms
10 and weapons that can strike key targets both within and
11 beyond the contested area. Examples of these include the
12 sort of standoff attack missiles that I spoke of earlier for
13 the bomber and submarine forces, but also swarms of
14 inexpensive autonomous weapons and specialized weapons for
15 attacking armored vehicles, ships, and surface-to-air
16 missile systems.

17 Finally, the tyranny of distance. A big part of the
18 problem we face in NATO today can be remedied simply by
19 putting appropriate forces, munitions, and support assets
20 back into Europe. Russia's armed forces are not superior to
21 ours in most dimensions, but they have geographical
22 advantages. They can amass ground forces on NATO's borders
23 far more quickly than we can respond. Last year's European
24 Reassurance Initiative, which funded the deployment of Army
25 ground forces into Europe, is a step in the right direction,

1 but our analysis suggests that more is necessary, and our
2 allies have shown that they are willing to do their part.

3 I have included in my written statement a chart that
4 provides a more complete list of the types of capabilities
5 that our research suggests merit the highest priority for
6 investments.

7 Again, thank you for the opportunity to appear before
8 this committee. I look forward with my colleagues to
9 answering your questions.

10 [The prepared statement of Mr. Ochmanek follows:]

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1 Chairman McCain: Mr. Thomas?
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1 STATEMENT OF JAMES P. THOMAS, PRINCIPAL, THE TELEMUS
2 GROUP

3 Mr. Thomas: Good morning, Mr. Chairman, Ranking Member
4 Reed, and distinguished members of the committee. I
5 appreciate the opportunity to appear before you today.

6 The chairman's recent white paper, "Restoring American
7 Power," rightfully argues that reshaping the U.S. military
8 should be given priority over resizing. And I certainly
9 agree. Getting the shape right is, in fact, more important
10 over the long haul before we think about the question of
11 size. This will involve determining the desired
12 characteristics of the force, its attributes, as well as its
13 organizational design.

14 The truth of the matter is today our force is simply
15 misshaped for many of the military challenges we face. It
16 remains too rooted in the 1990s design that was over-
17 optimized for conventional regional wars more akin to
18 Operation Desert Storm, and it is relatively less prepared
19 for protracted counter-insurgencies, global
20 counterterrorism, and the expansion of warfare into new
21 domains like cyber and space.

22 Take cyber warfare, for example. We know that this is
23 emerging as one of the most important domains of military
24 competition as countries and non-state actors alike attempt
25 to protect the viability of their networks while disrupting

1 those of adversaries, including the United States. And yet,
2 we have only begun to take rudimentary steps, initial steps
3 to begin better organizing, training, and equipping our
4 forces for this critical mission.

5 More broadly, our conventional military overmatch is
6 rapidly eroding in the face of great power revisionist
7 states like Russia and China that have adapted particular
8 asymmetric strategies to circumvent traditional U.S.
9 military strengths while imposing costs on the United States
10 and its allies in ways that are becoming very difficult to
11 counter. They are developing anti-access and area denial
12 capabilities, modernizing their nuclear forces, engaging in
13 gray zone activity below the threshold of war, and
14 conducting cyber attacks even in peacetime. These can no
15 longer be considered future challenges and we can no long
16 afford to defer efforts to reshape the U.S. military to
17 address them.

18 The United States finds itself today confronting these
19 challenges with a much narrower margin of military advantage
20 but with far greater fiscal constraints and with a less
21 unified set of allies and partners than it had during the
22 Cold War or its immediate aftermath.

23 There is no single approach or strategy that can
24 effectively address the full range of these challenges.
25 Instead, as Chairman McCain noted in "Restoring American

1 Power," the Department of Defense will need to fashion
2 regionally tailored strategies and force packages suited to
3 the unique requirements of Europe, East Asia, and the Middle
4 East. This is a point worth underscoring.

5 Efforts to reshape the force should be focused on
6 specific, particular military operational problems. Each
7 potential adversary in the theater will necessitate a unique
8 approach. And across the board, we will need a new high-low
9 mix of capabilities.

10 At the low end, the key attributes will be to reduce
11 procurement and sustainment costs and the ability to field
12 large numbers of weapons and platforms for steady state
13 operations in relatively permissive operating environments.
14 Many of our legacy forces and capabilities already fit this
15 bill.

16 On the high side, we will need two basic elements.
17 First is regionally tailored forces that are highly lethal
18 and survivable and can deter local aggression by potential
19 adversaries. And these, in turn, will have to be
20 backstopped by a more globally fungible surveillance and
21 strike swing force that can operate at long ranges both
22 physically and virtually to penetrate denied areas and hold
23 at risk large numbers of hostile military forces and other
24 targets with conventional, nuclear, or nonkinetic weapons.

25 Regionally tailored forces in Europe and Asia in

1 particular would place a premium on permanently forward-
2 stationed ground forces because it may be too risky to
3 deploy them in crisis or time of war, and they may be too
4 slow arriving to make a difference.

5 The globally fungible, long-range surveillance and
6 strike element of the force would include offensive cyber
7 warfare, as well as air, naval, and missile systems to
8 rapidly respond to threats globally while operating from
9 great distances with large sensor and weapons payloads,
10 penetrate into denied areas, evade detection, and persist to
11 strike elusive targets, conduct electronic and cyber
12 attacks, and sustain with minimal theater basing or
13 logistical support.

14 Together it is these two components which should serve
15 as the basis for reshaping the U.S. military. Now is the
16 time to make this transition to begin to reshape at least a
17 portion of our military so that we can effectively deter and
18 prevail across the range of competitions and conflicts we
19 will face over the next several decades.

20 This concludes my opening statement, and I look forward
21 to your questions. Thank you.

22 [The prepared statement of Mr. Thomas follows:]

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1 Chairman McCain: Mr. Donnelly?
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1 STATEMENT OF THOMAS M. DONNELLY, RESIDENT FELLOW AND
2 CO-DIRECTOR OF THE MARILYN WARE CENTER FOR SECURITY STUDIES,
3 AMERICAN ENTERPRISE INSTITUTE FOR PUBLIC POLICY RESEARCH

4 Mr. Donnelly: Thank you, Mr. Chairman, and to the rest
5 of the members of the committee for the opportunity share my
6 thoughts with you.

7 My role here is a little bit to be troglodyte knuckle-
8 dragger, and I am happy to play that part. I do not really
9 know any other. So I am going to focus less on
10 technological capabilities, although when photon torpedoes
11 are invented, I hope we are the first people to field them.

12 I think also that I have a certain sense of deja vu,
13 going back to the end of the Cold War, in that our failure
14 is less that we have not adequately responded to the
15 technological tactical or operational challenges that we
16 face, but that we have sort of failed to define our
17 strategic purposes in the world, although Jim Thomas'
18 testimony began to, I think, head in the right direction.

19 We have certainly behaved since 1945 as though our
20 principal strategic interest was the balance of power across
21 Eurasia, a favorable balance of power in those three
22 theaters that Jim talked about.

23 However, we have fallen into the habit of defining wars
24 by types rather than by particulars, by the location, by the
25 adversaries, and again by our own definition of what success

1 would be. And especially lately, we have gotten into the
2 habit of substituting the idea of strategic agility for
3 strategic sustainment. In other words, we have withdrawn
4 from the posture that we had through the end of the Cold
5 War, beginning with the withdrawal from the Philippines in
6 the late 1980s, almost 30 years ago, and the process more or
7 less has continued uninterrupted since then.

8 So what we see today is less the development of
9 stunning new capabilities on the part of our adversaries and
10 potential adversaries, but the fact that they can operate
11 without coming into contact with U.S. forces. To put it
12 simply enough, when we are not there, the "axis of weevils,"
13 as Walter Russell Mead has called them, burrow into the
14 woodwork and make a lot of mischief.

15 Finally, my testimony as written is shaped by a sense
16 of urgency about this. The United States has thought that
17 we have been in a strategic pause since the end of the Cold
18 War, and now we see what the results of that attitude have
19 led to.

20 Therefore, I am more interested in figuring out what we
21 can do in the near term with the forces we have to reverse
22 the geopolitical tide that seems so desperate just from
23 reading the headlines every day. So I have four
24 suggestions, things that can be invested in within not only
25 this fiscal year but over the course of a future years

1 defense budget and can return significant benefits within
2 the period.

3 First of all, forward-positioning forces is the single
4 most important reform that we could make. Again, not being
5 there is a recipe for mischief, and the actions especially
6 of the Russians and the Chinese reflect an absence of
7 American presence much more than their own really innovative
8 capabilities. They are using technologies that we invented
9 or others invented 20 years ago, but simply using them
10 against less capable people who are our allies and our
11 friends but without the backstop of American forces.

12 Secondly, we could get a lot more from the force that
13 we already have by fully funding readiness accounts. We
14 just recently did a series of naval deployment games in
15 addition to quantifying what the difference of forward-
16 basing would be. It is also pretty clear that we could
17 improve our readiness models. Since the end of the Cold
18 War, we have gotten into a rotation model of readiness. The
19 consequence is, particularly when forces return from the
20 deployment, they almost immediately begin to degrade at a
21 precipitant rate. They are not really available to be
22 redeployed. So the investments that we have made, both in
23 readying them in the first place and then deploying them,
24 dissipate remarkably quickly.

25 My final two recommendations are basically subsets of

1 the readiness one. Again, one of my recent projects has
2 been to understand how the next brigade that will deploy the
3 European Readiness Initiative that is based at Fort Riley in
4 Kansas is preparing itself for that rotation.

5 Putting it simply, the biggest problem they have is
6 personnel readiness. Because the force is too small, they
7 are unable to sustain small unit or large unit cohesion over
8 the course of time. It is often the case that, again, even
9 sort of at the company level and below and even at the crew
10 level and below, cohesion and teamwork get broken up
11 incredibly rapidly, the result being that even at the small
12 unit level, infantry company commanders will only have, say,
13 a quarter to a third of their Bradley systems fully manned
14 and mobilized, and they will not have any dismounts
15 whatsoever across the company.

16 Related to this is the dangerously low level of
17 munitions stocks. Tomahawk cruise missiles are probably the
18 paradigmatic example of this. These get cross-leveled. As
19 ships come, the ships go into repair, but the missiles go
20 into other ships, which are going back out to sea. And that
21 is just simply, again, an example of the kinds of things
22 that are being done simply to sustain day-in/day-out
23 patrolling and presence even at the diminished rate we are
24 at.

25 So I think there are things that can be done in the

1 near term while we are waiting to field new and more capable
2 and more technologically advanced systems, but we still have
3 a lot of capability left within the force that we have. If
4 we use it more efficiently, more effectively, and fully
5 fund-- make sure that the platforms that we have were
6 completely up to speed, we could get a lot more mileage out
7 of the old jalopy that we have got.

8 Thank you.

9 [The prepared statement of Mr. Donnelly follows:]

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1 Chairman McCain: Mr. Clark?
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1 STATEMENT OF BRYAN CLARK, SENIOR FELLOW, CENTER FOR
2 STRATEGIC AND BUDGETARY ASSESSMENTS

3 Mr. Clark: Chairman McCain, Ranking Member Reed, and
4 distinguished members of the committee, thanks for inviting
5 us to testify on this important subject today. I am honored
6 to be here with my colleagues and former bosses. So
7 hopefully I do not embarrass them too much.

8 I believe we all agree that we need to reshape and grow
9 the military. One thing we will have to think about as we
10 do that is the fact that it will take at least a decade for
11 us to get down the road of building up a bigger fleet and a
12 bigger Air Force and getting more ground forces and
13 developing new capabilities.

14 We already see that great powers like Russia and China
15 are likely to be big players, and that is only going to get
16 worse as we go a decade down the road. We are not going to
17 be able to necessarily consider the Islamic State as the
18 most important threat to deal with. Great powers in that
19 time frame are likely to be the most important factor in our
20 force planning.

21 That has some significant implications for how we need
22 to structure and posture the force in the future. In
23 particular, the objectives of countries like China and
24 Russia are relatively close at hand, when you think about
25 Russia wanting to go into the Baltics potentially. They

1 certainly have gone into Ukraine. Look at China looking at
2 potentially trying to coerce Taiwan into submission or to
3 attack the Senkakus and take them from Japan. Those are all
4 objectives that can be gained within a very short period of
5 time by those countries. And the so-called anti-access/area
6 denial capabilities or the long-range missiles and
7 surveillance systems they have would enable them to slow
8 down a U.S. and allied response enough to where they could
9 achieve those objectives and be done before we arrive. And
10 now the U.S. and its allies look like the aggressor that is
11 trying to change the status quo. When you think about what
12 happened in Crimea, if we were to try to overturn the
13 results of the Crimea invasion, we would look like we are
14 trying to change the facts on the ground as opposed to
15 coming to the aid of an ally or a partner.

16 What that means is that in the future, we are not going
17 to be able to take the same model we took with Iraq and
18 Afghanistan where we let something happen, aggression
19 occurs, bad things occur, we try to come back in after the
20 fact and overturn that aggression and change the status quo
21 maybe and change the regime of the adversary that started
22 the aggression. We are going to have to prevent those
23 things from happening in the first place, otherwise our
24 alliances are going to begin to fray, our security
25 assurances will not have the value that they need in order

1 to sustain alliances that we rely on.

2 So we are going to have to think about deterring rather
3 than trying to come in after the fact and overturn the
4 results of aggression. That has some significant
5 implications when you think about the capabilities of great
6 powers like Russia and China. There are three main things
7 that I would advocate that we really consider and take a
8 hard look at, which my colleagues have talked about.

9 First of all, a much more robust overseas presence or
10 posture. So not just putting forces out there for the
11 purpose of creating a faster response time, but putting
12 forces out there for the purpose of denying or defeating
13 aggression when it occurs. When you think about the Cold
14 War, we were worried about Soviet forces coming across the
15 Fulda Gap, coming into Japan across the Kamchatka Peninsula,
16 relatively fast operations that required us to be there to
17 be able to stop it rather than come in after the fact and
18 try to recover. That is where we are going to have to go in
19 the future, is manage that much more robust presence with
20 greater forward-basing and forward-stationing of forces.

21 But we are going to have to reshape the military to
22 give it the capabilities to survive in these kinds of
23 environments and conduct the offensive operations necessary
24 to defeat aggression so we can demonstrate to adversaries
25 that we are going to be able to stop them. That is the

1 heart of deterrence really.

2 I think growing the military to allow it to sustain
3 this more robust overseas posture, while affording it
4 sufficient time for training and maintenance between
5 deployments -- our readiness crisis of today is a function
6 both of not putting enough money into readiness necessarily,
7 but it is mostly a function of not having the time to do the
8 training and maintenance between deployments because the
9 force is not large enough for the demands we are placing on
10 it today.

11 Some specific things with regard to those three
12 elements. In terms of posture, not just increasing the
13 presence of forces but making sure they are tailored with
14 the capabilities necessary to deal with the threats and
15 opportunities of that environment. So today we deploy
16 forces more or less on a one-size-fits-all basis. It is the
17 same kind of unit, whether it goes to Europe or it goes to
18 Asia or it goes to the Middle East with some minor
19 tailoring. We are going to have to re-equip those forces
20 and they are going to be much different between regions
21 because what Russia cares about in the Baltics is much
22 different than what Russia might care about and be able to
23 do in the Mediterranean, the same with China in the South
24 China Sea versus the East China Sea. We need to think about
25 tailoring the forces much more.

1 Some of these changes will be counterintuitive to
2 address the particular challenges that a great power might
3 provide to us. For example, we might have to rely on naval
4 forces to a greater degree in Europe to help address a
5 Russian challenge in the face of NATO being unable to
6 respond quickly and therefore NATO forces and our own ground
7 forces in NATO not being able to respond to a Russian
8 aggression in the Baltics.

9 So really, ground forces in the Pacific might be
10 necessary to be able to provide us the ability to hinder
11 Chinese power projection beyond the first island chain of
12 the Philippines and Japan.

13 As Dave talked about, we need to improve our basing,
14 but we also need to improve the ability of our bases to
15 defend themselves, shifting to shorter- and medium-range air
16 defenses like he discussed.

17 And then the increased use of forward-stationing where
18 we have equipment and ships or aircraft that remain forward
19 and rotationally send crews out there to man them. That is
20 a model that the Navy and other forces have used somewhat
21 and we used a little bit in the Cold War, but it is a model
22 that might enable us to more affordably increase the posture
23 overseas without necessarily having to grow the number of
24 people in the force dramatically.

25 In terms of reshaping, we are going to have to think

1 about making the force able to survive in these highly
2 contested environments at the onset of conflict and do two
3 main things: to deliver high-volume missile-based fires
4 very quickly on short notice with very little warning. So,
5 for example, you think about a Russian aggression in the
6 Baltics. It could be done in 2 or 3 days. So you got to be
7 able to mount a very strong defense with something that is
8 going to give you a lot of fire power very quickly. A lot
9 of that is going to be missile-based. So you think about
10 surface-to-surface missiles the Army has, missiles that the
11 Navy and Air Force have. That is the kind of fire power
12 that is going to be necessary for that very short period at
13 the beginning of hostilities, followed by some moderate
14 volume but sustained combat that might have to occur for a
15 very long time in order to demonstrate to the adversary that
16 the U.S. is able to carry on the fight for the long haul.

17 We are going to need new operating concepts that allow
18 the force to survive and conduct these kinds of high-volume
19 initial and then moderate-volume follow-on operations. So
20 increasing the capacity of air and missile defenses by
21 shifting to shorter ranges and using capabilities like IFPC
22 or other short-range air defenses, being much better at
23 electronic and electromagnetic spectrum warfare, being able
24 to find the enemy without ourselves being counter-detected,
25 being able to deny the ability to communicate with

1 themselves and conduct networked operations, and going back
2 to some of the old Cold War techniques of concealment and
3 cover and deception where we might have to rely on physical
4 decoys to deal with the growing prevalence of electro-
5 optical and infrared sensors, ground force multi-domain
6 fires, like the Army is working on right now, to contribute
7 to strike and anti-ship warfare from the ground, and then as
8 you talked about, Mr. Chairman, undersea warfare. We are
9 going to have to look at shifting to unmanned systems to
10 carry a larger number of undersea missions as our own
11 submarine force shrinks but also dealing with the fact that
12 our adversaries are mounting more capable anti-submarine
13 warfare efforts of their own.

14 So reshaping the force is going to require reform in
15 how we acquire military systems and how we build strategy to
16 define the priorities for those systems.

17 And the last priority in terms of growing the military,
18 again, we need to address the size of the military because
19 of the current readiness shortfall, which is a symptom of
20 not having sufficient forces to do training and maintenance
21 between deployments.

22 But growing the military is also going to require some
23 changes and reform of the Department to eliminate excess
24 organizations and excess personnel and infrastructure that
25 currently are going to constrain the ability of the military

1 to grow itself to the size needed to sustain its readiness.

2 I think we can accomplish these changes over the next
3 decade, but it is going to require a strategy and the
4 leadership to follow it.

5 And so I am looking forward to your questions, and
6 thank you very much.

7 [The prepared statement of Mr. Clark follows:]

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1 Chairman McCain: Thank you very much.

2 Leaving out the issue of sequestration, which is a big
3 leave-out, what would be your first two or three top
4 priorities that this committee and this administration
5 should address, beginning with you, Mr. Ochmanek?

6 Mr. Ochmanek: Mr. Chairman, clearly we have unrealized
7 potential in many of our platforms, and I think all of the
8 other witnesses observed that as well. And I believe the
9 quickest way to fill that gap is to ramp up the production
10 and procurement of advanced munitions, cruise missiles,
11 guided weapons, things of that nature that can allow our
12 forces from the outset of a campaign to deliver these high-
13 volume fires that Bryan talked about. I think that would be
14 number one for me.

15 Chairman McCain: Mr. Thomas?

16 Mr. Thomas: I absolutely agree. I would start with
17 the munitions inventory and figuring out how we thicken our
18 density of a whole range of munitions that we simply lack
19 today. We have got this huge mismatch between the number of
20 platforms we have and the weapons to deliver them and to
21 persist in a lot of these fights.

22 The other thing I would add is getting on with the
23 business of looking seriously at the issue of forward-
24 stationing our forces. I think this has really been
25 delayed. We have been in this expeditionary warfare mindset

1 for 25 years, and I think that really needs to be revisited
2 because I think it is very dangerous for the world that we
3 are going to be in for the next couple decades.

4 Chairman McCain: Well, I also would give some credit
5 to the previous administration for the European Reassurance
6 Initiative on that issue.

7 Mr. Donnelly?

8 Mr. Donnelly: I would agree with the two points
9 brought up before. Again, I would add the need to add
10 people to flesh out hollow units. We lose the investment.
11 Even when the platforms are ready, the crews are not. So if
12 we could just have more people within the unit structures
13 and within the institutional structures, the headquarters --
14 I know this is like anathema, but there needs to be a
15 training base to be able to produce trained and ready
16 forces.

17 Chairman McCain: Mr. Clark?

18 Mr. Clark: I would say munitions, as we just
19 discussed, but maybe even more importantly, the ability to
20 passively sense the adversary and target the adversary.
21 Today our potential adversaries know exactly where we
22 operate with our radars and our other active sensors, and if
23 we do not have the ability to find them passively without
24 being detected ourselves, our weapons are not going to be
25 that useful because we will be counter-detected.

1 Chairman McCain: Well, we will begin with you with my
2 other question, Mr. Clark. We have not talked in this
3 conversation much about cyber, and that obviously the
4 aspects of cyber have dominated our news and our priorities
5 here for some time. What do you think we ought to be doing
6 there?

7 Mr. Clark: Clearly, we need to be refocusing ourselves
8 on cyber defense of our own networks, particularly our
9 classified networks. I think one challenge we are going to
10 face is we are focused on our unclassified networks being a
11 potential source of exploitation, particularly industrial
12 networks where you can get information on acquisition
13 systems. But we need to look at the defense of our
14 classified networks where there has been a lot of work done
15 by our potential adversaries on how to get into those
16 systems as potentially a trusted user. So dealing with that
17 would be a key factor I think that we have to deal with in
18 cyber.

19 Chairman McCain: How about developing a policy as to
20 how to counter it, Mr. Donnelly?

21 Mr. Donnelly: I would also add that we need to
22 understand better what the impact of these things is at the
23 tactical level. We have not operated in a contested
24 electronic environment really since the end of the Cold War.
25 It is more like old-style electronic warfare than it is

1 cyber. Again, this brigade from Fort Riley in its National
2 Training Center rotation is really going to be the first
3 sort of tactical experiment because the opposing force at
4 Fort Irwin will have Russian-style capabilities in the
5 exercise. So I think that will be a great learning
6 experience for us to understand what these developments mean
7 for actual people in the field operating in this kind of
8 environment.

9 Mr. Thomas: Mr. Chairman, we have been talking about
10 cyber for more than 20 years, and everyone thinks that they
11 do cyber to a certain extent if you look across the
12 services. The reality is no one is singularly focused on it
13 as a mission the way we focus on the air domain or the
14 undersea or the land domain. I think it is time to
15 reconsider do we need a single organization which focuses on
16 organizing, training, and equipping for cyber warfare. I
17 would start there.

18 Chairman McCain: Cyber Command is not doing that?

19 Mr. Thomas: I think Cyber is taking component efforts
20 from the services, but it is playing the role of a combatant
21 commander in terms of how it thinks about fighting the
22 force. But I think we are not doing as well as we could be
23 doing when it comes to just basically recruiting,
24 organizing, and training those forces. In particular, I
25 think about the role of the Reserve component, which could

1 be a huge advantage for the United States in how we approach
2 cyber warfare in the years ahead.

3 We also need to fully integrate cyber into our war
4 plans today. Oftentimes it is treated as an annex and
5 special technical operations, and it is not fully
6 appreciated by our operational commanders.

7 And the last is I think we need to move beyond the
8 ghettoizing of cyber and we need to fully integrate it with
9 electromagnetic warfare -- electronic warfare as we move
10 forward. These two are just integrally related.

11 Mr. Ochmanek: Very quickly, I would endorse what Bryan
12 said about the importance of cyber defense, that is the
13 threat to the integrity of our command and control systems.
14 But I want to take a page out of Tom Donnelly's book and be
15 the troglodyte here.

16 Cyber is sometimes invoked by people as a magic wand
17 they can pass over things to make up for gaps in kinetic
18 capabilities. I am skeptical about that. We do not have a
19 lot of ability to test the efficacy of our cyber tools, to
20 the extent we have them, nor do we know how long they will
21 last if they are in fact in place. So at some level, there
22 is no substitute for putting holes in things and breaking
23 them.

24 Chairman McCain: Senator Reed?

25 Senator Reed: Well, thank you, Mr. Chairman.

1 This has been very insightful and I appreciate it very
2 much.

3 We all talked about priorities, but in reality, they
4 are competing priorities. And we would all like to do them
5 all and we would all like to resource them robustly. But
6 when push comes to shove, it is going to be the competition
7 between these priorities.

8 The three key ones I think that have been mentioned by
9 the panel -- one is the readiness of the existing force
10 today. Second is growing that force with comparable
11 readiness, and then the third is the new technologies, the
12 third offset, the leap ahead, the investing in something
13 that today does not appear to be of immediate consequence
14 but could be the changing system.

15 Starting with Mr. Ochmanek, just kind of your response
16 to how do we deal with those competing priorities. Do we
17 emphasize immediately one and then shift? Or do we
18 concentrate on the one that is going to be neglected and
19 that might be the new technology? And so your comments and
20 then right down the line.

21 Mr. Ochmanek: Senator Reed, could I respectfully take
22 a little bit of issue with your third priority? I do not
23 think I would equate modernization of the force with third
24 offset and exotic technologies. I think there are some very
25 near-term mature things that we can invest in quickly like

1 munitions that we have already tested to really get a rapid
2 return on that investment in terms of improved power
3 projection capability.

4 I would hope that this Nation could find the will and
5 the resources to, at the same time, bring our troops and
6 units the training and readiness they need and accelerate
7 this modernization program, again buying into near-term
8 munitions, sensor systems, forward posture, putting another
9 heavy brigade in Europe. These are not high-tech, high-
10 cost, exotic things. I think you would get some very quick
11 strategic returns on those kinds of things.

12 Senator Reed: Mr. Thomas, please.

13 Mr. Thomas: For a long time, we have drawn this line
14 between near-term readiness and long-term readiness, and
15 maybe our adversaries are doing a favor because those really
16 now are almost one and the same. The problems we are
17 talking about here, whether it is great-power competitions
18 dealing with Russia and China or dealing with nuclear powers
19 and potential nuclear powers like North Korea and Iran or
20 dealing with the continued global jihadist threat -- these
21 are all with us today and they are going to be with us for
22 quite some time. And so we do not have the luxury of just
23 saying here is what we can do about Russia and China 10 or
24 15 years from now. As Bryan Clark said, I mean, a lot of
25 the scenarios we think about are scenarios that could happen

1 tonight. These really are not that futuristic.

2 So I think it is a question of balance between what are
3 the near-term steps, as Dave Ochmanek is talking about, in
4 terms of building up our munitions inventories, forward-
5 stationing, and these sorts of steps that we could take
6 immediately, as well as skating to the puck of the future in
7 terms of what are we going to need as the threats continue
8 to evolve 10 years hence. And we have to do both of those
9 things more or less simultaneously.

10 Senator Reed: Mr. Donnelly, please.

11 Mr. Donnelly: I would basically agree with what has
12 been said by Dave and Jim. A dollar spent today is probably
13 worth \$5 or more programmed 5 or 10 years from now. There
14 are some exciting technologies. We have also failed to buy
15 really anything new in numbers for 2 decades. We have very
16 few choices about what we could throw money at.

17 Again, I think there are some things we could do
18 differently, particularly with platforms like the F-35B,
19 that again would give us capabilities that we do not
20 necessarily have on station at the moment but could really
21 use. I believe, Senator Reed, you are the one who said the
22 future is now and that is pretty much true.

23 Senator Reed: Thank you.

24 Mr. Clark?

25 Mr. Clark: To restore the readiness of the force, even

1 down the road just a few years, we are going to have to
2 reduce the amount of operations we do today. There is no
3 other way to reset the force because we cannot build a bunch
4 of new force today. So one choice we are going to have to
5 make is reduce the operations we do and the stress we put on
6 the force today to enable it to get the readiness it might
7 need in 5 or 10 years. That is the only way we are going to
8 be able to reset it.

9 I think in terms of technology and new systems, as Dave
10 was saying, there are a lot of new technologies that are
11 currently being demonstrated, tested, prototyped. They are
12 just not transitioning. They are just sitting waiting for
13 somebody to take them on and say I am going to put you onto
14 my platform and begin to use you as a system. Examples of
15 this might be IFPC, like Dave was saying, which could really
16 improve our air defense capabilities. Active protection
17 systems for tanks and other armored vehicles. We do not
18 have active protection systems on our ground vehicles today,
19 and every other NATO country does. Those systems are
20 available and could be strapped on, bolted onto our existing
21 systems.

22 So munitions, electronic warfare, sensors. There are a
23 lot of systems that we currently are just waiting to bring
24 on board and we could incorporate those into the existing
25 fleet or force.

1 Senator Reed: Mr. Clark, just quickly because my time
2 has run out. These systems are out there. Our NATO allies,
3 who we generally consider to be sort of less advanced or
4 progressive, have them. Why do we not have them? Is it a
5 budget issue or is it a cultural issue? What is it?

6 Mr. Clark: To some degree a cultural issue. When you
7 do not think you are going to have to fight in an
8 environment where you are going to be faced with people
9 shooting high-end weapons at you all the time, then you tend
10 not to invest in those things. And now that we are faced
11 with a situation where all of our forces are going to be in
12 contested environments against high-tech weapons, they are
13 going to have to start thinking about how to defend
14 themselves.

15 Senator Reed: Thank you.

16 Thank you, Mr. Chairman.

17 Chairman McCain: Senator Inhofe?

18 Senator Inhofe: Thank you, Mr. Chairman.

19 I think it is important just to get in the record
20 because of this very distinguished panel that we are in a
21 threatened position today in this country and times have
22 changed from the past.

23 We had a hearing -- I chair the Readiness Subcommittee--
24 - last week. We had the vice chiefs come in. It was a
25 pretty sobering experience there. They made their testimony

1 such as General Allen said we have had most of our
2 modernization programs on life support for the last several
3 years. Currently our modernization is 50 percent of what it
4 was in 2009.

5 It was General Wilson, and this is a quote. He said at
6 the very bottom what we called the hollow force of the
7 1970s, pilots were flying 15 sorties a month, about 20
8 hours. Today we are flying less hours, less sorties than we
9 did in the 1970s. He was saying essentially we have a
10 hollow force today. We have to recognize that.

11 The first question I would ask you probably in
12 anticipation of this, you read some of the statements that
13 were made by the four vice chiefs. And if so, do you agree
14 pretty much with them?

15 Mr. Ochmanek: Senator Inhofe, I do agree. Some of
16 this is probably unavoidable as a result of 15 years of
17 heavy use of the force and ongoing operations. Some of it
18 is certainly related to budget constraints that have been
19 placed on the force by the Budget Control Act. But we
20 absolutely do need to get our men and women in uniform and
21 our units the training and resources they need to be at
22 their peak level of readiness.

23 Senator Inhofe: Thank you very much.

24 The rest of you, do you generally agree with them?

25 Mr. Clark: Yes, sir, Senator.

1 One thing I would add, though, is part of the reason we
2 had this readiness problem is we do not have the time for
3 the forces to train and maintain between deployments. And
4 the other part is the budget uncertainty, not so much the
5 lack of money overall. It is the fact you cannot plan your
6 maintenance in advance and then budget to it and carrying it
7 out. And so as a result, you have to do maintenance on an
8 emergent basis or it is insufficiently planned, which causes
9 growth. So it increases the cost, and then you do less work
10 in the end.

11 Senator Inhofe: Yes, but of course, if you are in a
12 period, as we have been, of starving the military, the first
13 thing that goes is maintenance and then modernization
14 because that is less visible out there.

15 Now, you, Mr. Clark, mentioned just a minute ago --
16 yes, it was you that said it would take at least a decade
17 preparing right now for what we are going to try to have for
18 the future to face these threats that are coming. And I
19 think, Mr. Thomas, you also made reference to taking a
20 decade.

21 It reminds me a little bit of my last year on the House
22 Armed Services Committee before I came to the Senate. We
23 had someone testify -- this is 1994 -- that in 10 years we
24 would no longer need ground troops. So it kind of puts us
25 in a situation. If it is going to be 10 years, what do we

1 prepare for today? That is a problem.

2 Now, the one agreement -- and I think it is very
3 significant that we get this in the record from the four of
4 you. You have already done it I think in your opening
5 statements and in your responses -- is you are looking very
6 much at forward-deployment. And I think we all agree that
7 that is necessary.

8 We remember also -- it was back in the 1990s during the
9 Clinton administration -- the emphasis was the other way.
10 In our political system, something you folks do not have to
11 deal with but we do, people, when they start talking about
12 going through a BRAC round just say, fine, just do not do it
13 here at home. Do it overseas. Well, that is what happened.

14 I remember when Vincenza was under attack. That was in
15 Italy. And it was one of them that was going to be reduced
16 down in the process of the BRAC round.

17 Now, we all remember what happened when we were trying
18 to get troops into Iraq and we were not able to take them on
19 the ground through Turkey. And so Vincenza came through.
20 Well, if that had been bad weather at that time, we could
21 not have done it. So we went in. It was very difficult to
22 do, but we rebuilt in Aviano the capability of sending these
23 kids in no matter what the weather conditions and all that.

24 So I am saying I agree wholeheartedly. I disagreed
25 back in the 1990s when the reverse was true. And I would

1 like to have each one of you make a comment as to the
2 necessity for the forward-deployment, anything you have not
3 already said so it will be in the record, starting with you.

4 Mr. Ochmanek: Senator Inhofe, our alliance
5 relationships and the integrity of those security
6 commitments that we give to our allies are the bedrock of
7 our national security strategy. If we are going to
8 influence events in Eurasia, which have the potential to
9 directly affect the security and wellbeing of Americans, it
10 is important that those security alliances be viable.
11 Forward-stationed U.S. forces are both a tangible
12 demonstration of the U.S.'s will and ability to defend
13 common interests abroad, and they are the advance lead
14 elements of our initial defensive operations. So I
15 absolutely agree that forward-stationed forces are essential
16 to the viability of our strategy and that we are under-
17 postured certainly in Europe and to some degree in the
18 western Pacific as well to meet the challenge.

19 Senator Inhofe: My time has expired. Do the rest of
20 you generally agree with that statement? Thank you very
21 much.

22 Thank you, Mr. Chairman.

23 Chairman McCain: Senator Warren?

24 Senator Warren: Thank you, Mr. Chairman.

25 And thank you to the witnesses for lending your

1 expertise here today.

2 You know, when I look at what is happening, it seems to
3 me that right now our potential adversaries are more
4 interested in challenging us through cheap and asymmetric
5 means, whether that is through cyber activities, the use of
6 local agents, separatists, paramilitary forces, as we have
7 seen in Ukraine and other places. All the ships and all the
8 aircraft in the world cannot solve that challenge. In fact,
9 our adversaries pursue alternative means to achieve their
10 ends precisely because we have always had such dominance in
11 the air and sea.

12 So to start, I would like to focus on one of these
13 asymmetric threats. Mr. Clark, what capabilities do we need
14 in the cyber realm specifically to deter asymmetric actions
15 that fall short of open conflict?

16 Mr. Clark: So the first thing, Senator, would be to
17 have a cyber policy that clearly defines what our actions
18 are going to be in the event of an attack and clearly
19 defining what it is that we mean by attack. And this might
20 involve being a little bit more open with things that we now
21 treat as classified and do not want people to hear about.
22 So just like in other areas of warfare, we are going to have
23 to be more open about it.

24 Senator Warren: That is very helpful. Thank you.

25 Do you believe that future conflict with a

1 sophisticated adversary will involve attempts to exploit our
2 cyber vulnerabilities, disrupt our reliance on space, or
3 distort our ability to communicate and share information
4 rapidly?

5 Mr. Clark: Certainly, yes, Senator. Also, it is going
6 to involve electronic warfare where they do not just use the
7 wired Internet but also use the radio frequency spectrum to
8 affect our ability to conduct the kinds of operations we are
9 used to.

10 Senator Warren: And what kinds of investments should
11 we be making in order to prepare for this kind of
12 contingency?

13 Mr. Clark: So the focus should be maybe on the ability
14 of our forward forces to be able to operate in an
15 environment where they are going to lose a lot of the long-
16 range communications that they today are used to having. So
17 line-of-sight communications, more resilient communications
18 that are jam-resistant. There are technologies out there.
19 DARPA has a lot of programs that are building these. They
20 are very successful. It is sort of amazing how well that
21 they are able to protect communications. You just have to
22 accept the fact that you are going to be down to a much
23 shorter-range set of operations than you are used to.

24 Senator Warren: I think that is very helpful, and I
25 appreciate that.

1 We have heard a lot today about conventional equipment,
2 but I think that these new domains may well be decisive in
3 any future conflict and we should be putting a lot of
4 attention on them.

5 We have also heard a lot today about the size of the
6 force, and I just want to take a minute to ask another
7 question about the focus on its future capability. The
8 Department recently briefed this committee on its third
9 offset strategy and advanced technology, and while it all
10 sounds very promising, the fact is many of these
11 technologies that they are talking about are still in
12 development.

13 So given that that is the reality, what priority should
14 we give to maintaining or increasing the size of the RDT&E
15 budget in fiscal year 2018 so that the investments are in
16 place to support the Department's third offset and other
17 offsets and efforts like the ones that you all have
18 described in your testimony? Mr. Clark?

19 Mr. Clark: I would say we need to increase the RDT&E
20 budget not just to bring on some of the far future
21 technologies but to transition some of the ones that have
22 been developed. We have a lot of really effective
23 technologies that have been demonstrated that I have seen
24 but just have not been transitioned into the force because
25 they have not made that last set of testing or that last set

1 of transition developments that are enabled to be plugged
2 into an existing platform.

3 Senator Warren: Well, let me actually just hone in on
4 that a little bit more. As you point out, we may be 10 to
5 20 years away from some of these technologies like autonomy
6 before they are fully mature. Are there other more
7 achievable near-term technologies that we should be
8 investing in right now to put us on the right path?

9 Mr. Clark: Electronic warfare systems I think would be
10 a key area and undersea warfare systems. Autonomy undersea
11 is very hard because of sensor capabilities, and so the
12 other place I would look at investing is in sensor
13 capabilities to enable an autonomous system to better see
14 where it is going. I mean, the problem we have with
15 autonomous systems in a lot of cases today is they do not
16 have a good enough sense of their environment to make a good
17 decision. They can be really smart, but they cannot see
18 what they are doing.

19 Senator Warren: So it is very helpful. I see lots of
20 nodding heads. I will put this in as a question for the
21 record so I can get everyone's views on this.

22 You know, I think we should be budgeting our defense
23 resources based on 21st century threats. I want us to
24 invest smartly not simply rolling out more of the last
25 century's equipment off the production line, but instead

1 focusing our investment on the next generation and even
2 leap-ahead technologies that are more likely to ensure our
3 military's superiority across multiple domains.

4 Thank you very much.

5 Thank you, Mr. Chair.

6 Chairman McCain: Senator Cotton?

7 Senator Cotton: Thank you, Mr. Chairman.

8 Thank you, gentlemen, for your testimony today. A lot
9 of the talk today has focused on three buckets, about which
10 we frequently speak: end strength or how many troops we
11 have; readiness, how those troops are trained, ready to
12 fight; and modernization, buying new stuff for the future,
13 new vehicles, new aircraft. We have not yet touched on a
14 subset of that third bucket, nuclear modernization, some of
15 which is both nuclear conventional like the F-35 or the
16 B-21, some of which is exclusively nuclear like the ground-
17 based strategic deterrent or the nuclear command and control
18 system.

19 Could we just maybe start at my left, your right, and
20 go down the panel and get your thoughts on nuclear
21 modernization? Mr. Ochmanek?

22 Mr. Ochmanek: Senator Cotton, I think the Nation at
23 this point does not have a choice but to modernize its
24 strategic nuclear forces simply because of the block
25 obsolescence of our major platforms and weapon systems.

1 Nuclear weapons remain the bedrock of our security. We must
2 have a viable deterrent. We must have a viable second
3 strike capability so that no adversary ever could see an
4 advantage to crossing that threshold and using nuclear
5 weapons against us. And I think the Ohio replacement
6 program rightly has first place in line both because of the
7 age of the Ohio ships and also because I personally believe
8 that the undersea portion of our nuclear triad is the
9 bedrock of that survivable second strike force.

10 Senator Cotton: Mr. Thomas?

11 Mr. Thomas: I would just add to that and say we need
12 to be paying closer attention to our tactical nuclear forces
13 and the tactical nuclear balance. The most likely nuclear
14 confrontation we are going to have is going to be a theater
15 range tactical contingency, and this is one that I think we
16 have largely given -- we have been inattentive to over the
17 past 25 years. For example, in the case of Europe, we know
18 that Russia is in violation of the INF Treaty. They are
19 developing medium-range both cruise and ballistic missile
20 systems that could hold NATO military targets at risk. And
21 I think we should question the ability of fourth generation
22 fighters armed with gravity bombs, B-61's, to respond in the
23 presence of precision air defenses that would likely ring
24 almost any militarily significant target. We need to have
25 viable theater-range, lower-yield response options than we

1 currently do.

2 Senator Cotton: Before we move on, I have got to
3 follow up on that. What is your best estimate on the
4 imbalance today between Russia and NATO forces on tactical
5 nuclear weapons?

6 Mr. Thomas: Well, there is obviously a numerical
7 asymmetry that favors Russia. I would say more importantly
8 is the qualitative asymmetry. In terms of these middle
9 rungs on the escalatory ladder, I think Russia has the
10 advantage, and we need symmetrical, in-kind response options
11 that we lack. We talk a lot about LRSO and that is a viable
12 option. There may be other systems more similar to JASSM,
13 which allow us some low observable standoff capability with
14 a very high probability of the weapon arriving at the target
15 that we are going to need to consider in the years ahead.

16 Senator Cotton: And you mentioned Russian violations
17 of the Intermediate-Range Nuclear Forces Treaty. So if
18 media reports are to be believed and Russia has now not just
19 tested but put into operational use a road mobile cruise
20 missile of intermediate range, does that mean that the
21 United States is the only nation on the face of the earth
22 that has restrained itself from such a missile?

23 Mr. Thomas: I do not know if it is the only nation on
24 the face of the earth, but if you think about the robust
25 arsenal of intermediate-range ballistic missiles that China

1 has built up, the IRBM capabilities of North Korea and Iran,
2 and now Russia in flagrant violation of the INF Treaty, the
3 United States is kind of the last party standing. And we
4 look sort of like a chump in this class of problems. This
5 is an area where we need to probably be thinking about a
6 world beyond the INF Treaty both because that may be the
7 world that becomes our reality, but also if we want to go
8 back and try to reinforce the INF Treaty, we have to have
9 some viable military backstop for any sort of negotiations.
10 Right now we would be negotiating from a position of
11 technological weakness.

12 Senator Cotton: Thank you.

13 Mr. Donnelly?

14 Mr. Donnelly: I would agree again with what Dave and
15 Jim have said, but Jim's point I think is a larger one than
16 he suggested. That is, we have a strategy deficit when it
17 comes to nuclear warfighting. I hate to use that terrible
18 term. We have a world that is increasingly a multipolar
19 nuclear world. There was a report yesterday that the
20 Chinese have allegedly reached parity both qualitatively and
21 quantitatively with the U.S. nuclear arsenal. I have no
22 idea whether that is actually true or not, but if it is not
23 true today, it will be true tomorrow or pretty soon.

24 So we think in Cold War very tit for tat terms. I am
25 not sure what the new paradigm should be, but I am pretty

1 sure that the old one is inappropriate to the world that we
2 are living in now.

3 Senator Cotton: Mr. Clark?

4 Mr. Clark: I would agree with the comments of all my
5 predecessors here, particularly with regard to the tactical
6 nuclear weapon question because if we do not have the
7 ability to respond to that kind of threat, it is not so much
8 that we might have an exchange there, but it is just the
9 fact that we are vulnerable to coercion then. The Russians
10 threaten the Baltics. We threaten to come in on their
11 behalf. The Russians threaten a small nuclear attack, and
12 we do not have any way to respond to that. So we are forced
13 to back down.

14 Senator Cotton: Thank you.

15 Chairman McCain: Senator Hirono?

16 Senator Hirono: Thank you, Mr. Chairman.

17 All of you have identified a number of countries in the
18 Asia-Pacific region as threats, and you additionally
19 identified the prepositioning of U.S. forces as a key
20 strategy in the proposed reshaping of the military.

21 Relative to what is in place in Pacific Command right
22 now, what additional assets and capabilities would you
23 recommend placing in the Asia-Pacific theater? And we can
24 start with Mr. Ochmanek.

25 Mr. Ochmanek: Senator, I would start by ensuring that

1 the bases and facilities that we rely on in that theater
2 have what they need to defend themselves in the case of
3 attack. And as I mentioned in my remarks, there are some
4 fairly rudimentary things we can do. Putting gravel out
5 there to fill holes in runways, building inexpensive
6 shelters so that our airplanes are not exposed to
7 observation and attack, moving those airplanes around more
8 frequently would go a long way toward bolstering our
9 deterrent posture in that region.

10 Going beyond that, these deficits we see in
11 capabilities across the board for standoff weapons and
12 munitions, for sensors that can survive in a contested
13 environment, those sorts of things. As we begin fielding
14 more of those capabilities, the Asia-Pacific region should
15 have perhaps first claim on those as they reach the force.

16 Senator Hirono: Do we need more submarines in the
17 area?

18 Mr. Ochmanek: I think that submarines can make very
19 important contributions. Every combatant commander but
20 particularly the commander of PACOM would like to have more
21 submarines.

22 Senator Hirono: If the rest of the panel pretty much
23 agrees, if you have something to add, please do so,
24 otherwise I can go to my next question.

25 Mr. Donnelly: I have a couple of things. First of

1 all, we need to be more forward, particularly in Southeast
2 Asia and the South China Sea. It is very unfortunate that
3 President Duterte is not only an erratic personality but
4 seems very interested in at least balancing American
5 influence with Chinese influence.

6 Secondly, you need to think about the theater more
7 broadly speaking. We are treating it now only as a maritime
8 theater. China is principally a continental power and its
9 most traditional strategic vulnerabilities have been from
10 Southeast Asia and also from Central Asia. This is a case
11 where a continental power is going to sea and projecting
12 power, and we are doing nothing to divert its attention back
13 to its most traditional and the things that make the Chinese
14 most neuralgic.

15 Mr. Clark: I would add that we need to increase the
16 forward posture of surface naval forces, as well as
17 submarines, because that is maybe a more visible deterrent
18 to Chinese aggression, at least over next 5 or 10 years.

19 And Australia is a place we need to be putting
20 investment with regard to infrastructure and expeditionary
21 basing in the northern part of Australia. In our wargaming,
22 we find a lot of times that Australia ends up being the
23 sustainment point for a lot of U.S. forces that would be
24 operating in the South China Sea.

25 Senator Hirono: Well, right now, we have rotational

1 forces in Australia. But what about Guam then to what you
2 are seeing?

3 Mr. Clark: We already rely on Guam, but what happens
4 in some of these games is that Guam ends up supporting
5 operations in the East China Sea and we end up having to
6 rely on Australia to a greater degree to provide the fuel
7 and the back office logistics, if you will, for the force
8 that is in the South China Sea.

9 Senator Hirono: Do we not have some concerns about
10 Australia's willingness to have our ongoing presence there?

11 Mr. Clark: Not necessarily. I was in Australia a
12 month ago and talking with the government officials there.
13 They are very supportive of a U.S. presence and using the --
14 they call them expeditionary bases in northern Australia to
15 a greater degree than we do today.

16 Senator Hirono: Thank you.

17 Our reliance on special forces -- the U.S. has relied
18 very heavily on special operations forces over the past
19 decade and a half, and they have been very successful in
20 many missions, including anti-terror operations. There is
21 speculation that President Trump could rely even more on
22 these forces that, some would argue, have been overused and
23 in need of better dwell ratios.

24 What are your thoughts on the role of special
25 operations in the future? Anyone?

1 Mr. Thomas: Well, I would just comment and say I think
2 the role of special operations is going to continue to
3 expand. And so we have already taken steps over the last
4 decade to grow our special operations forces. They can only
5 grow at a certain pace, and we are limited in terms of
6 recruitment and the training pipeline. So it will always be
7 a very limited, highly valued asset.

8 But as we think about great power competitions, I think
9 that the special warfare role of the special operations
10 forces is going to increase; that is, think about
11 unconventional warfare, training our allied and partner
12 forces in resistance techniques, helping them to assert more
13 effective local defenses in the event of an invasion or even
14 low-intensity gray zone activity in those countries. And
15 they will also have a much greater role to play in some of
16 the missions Dave Ochmanek was talking about earlier, in
17 things like disrupting the sensor grid of an opponent early
18 in a campaign. But direct action and special reconnaissance
19 roles for special operations forces in high-intensity
20 conflicts I think is also an area that will increase.

21 Senator Hirono: Do the rest of you agree? Very
22 briefly.

23 Mr. Donnelly: I disagree pretty strongly. We have
24 grown our SOF. They have done remarkable things over the
25 last 15 years, but they have had no discernable strategic

1 effect from my point of view. I think that is in the nature
2 of special warfare. It is very difficult to achieve a
3 large-scale effect by raids and things like that. So I
4 think it has diverted our attention from things that are
5 more strategically critical.

6 Senator Hirono: Thank you very much, Mr. Chairman.

7 Chairman McCain: Senator Ernst?

8 Senator Ernst: Thank you all very much for your
9 testimony today.

10 I chair the Emerging Threats and Capabilities
11 Subcommittee. And yesterday I held our first briefing and
12 focused on Russia's increasing anti-access/area denial
13 capabilities in Europe. And the current problem set that is
14 posed by Russia right now is expanding placement of their
15 air defense systems, surface-to-surface missiles, and
16 coastal defense weapons. And all of this is not just
17 concerning to me. It is concerning to a lot of folks out
18 there.

19 My concern is compounded by Russia's aggressive
20 actions. We see it every day on the news, not just with
21 their naval vessels, but their ground forces as well.

22 So, Mr. Ochmanek, you argue that a significant portion
23 of the capability gap we face on NATO's eastern flank can be
24 addressed today through appropriate U.S. force structure
25 changes. Could you explain a little more about that, and

1 really, what is the most immediate need that you would see
2 to counter the rising threat that we see from Russia?

3 Mr. Ochmanek: Senator Ernst, in our gaming, we found
4 that there is sort of a critical threshold of about three
5 heavy brigades that need to be present to actually give the
6 defending forces the ability to effectively slow down an
7 advancing Russian attack on the Baltic States. So
8 positioning that kind of asset, along with artillery forces
9 forward, would make a big effect on deterrence.

10 But there is a capability dimension to this as well,
11 and you mentioned the Russian air defenses. Since the end
12 of the Cold War, the Russians have deployed whole new
13 generations of surface-to-air missile systems. These are
14 longer-range systems than we ever encountered before, very
15 powerful radars, very capable electronics. We are still
16 shooting at them a weapon that was developed in the 1970s,
17 and it is out-ranged by the things it is shooting at. So we
18 are asking pilots to go into situations to suppress SAM
19 systems that they cannot reach with their weapon.

20 Solving this particular problem has nothing to do with
21 high-tech. It has to do with building a bigger rocket. We
22 know how to do that. So that is why I say this is not
23 necessarily a set of things that requires a lot of high,
24 exotic technology. It involves ramping up investments in
25 things we know how to do today.

1 Senator Ernst: So the suggestion of three heavy
2 brigades in Eastern Europe -- would that be a permanent
3 presence? Is that a rotational force? Is that a
4 combination of the two?

5 Mr. Ochmanek: we are examining those options for the
6 Army right now at RAND. I think it could be a combination
7 of the two. You certainly want to have some on-the-ground
8 presence all the time, if only to cope with the possibility
9 of a surprise attack out of the blue, but I think also just
10 positioning a lot of the heavy equipment there and ensuring
11 that we can fly people into marrying up with it quickly
12 would also be a part of the solution.

13 Senator Ernst: And then also part of the solution is
14 just different munitions as well.

15 Mr. Ochmanek: Absolutely right. And having those also
16 forward so that they are available from the outset of a
17 conflict.

18 Senator Ernst: I appreciate that very much. Thank
19 you.

20 And, Mr. Donnelly, in your testimony you talk about how
21 things -- I like this -- like warp drives and cloaking
22 devices would be cool, but in the meantime, we really do
23 have to refurbish our current force. After hearing the
24 service vice chiefs testify on readiness last week, I think
25 all of us were appalled once again this year. I think you

1 raise an important point.

2 And so focusing on readiness and ensuring our current
3 capabilities can address the threat we face today is very
4 important. And that is why I have been a proponent of
5 upgrading small arms.

6 General Allen last week in his testimony -- he said
7 something that was pretty striking I think that we all
8 should listen to. He had said if we do not have soldiers
9 carrying guns, we do not have anything. So true for the
10 Army. How important is it for fixing today's readiness in
11 making sure that we are ready to fight the wars of tomorrow?

12 Mr. Donnelly: I think it is really a disservice to
13 disaggregate wars by type and to abstract out the element of
14 time from any strategic competition. We could invent some
15 really nifty gizmos and we could probably do it pretty
16 quickly. We actually have a lot of technology that is
17 backed up in the pipeline that just has not made it to the
18 field that we could accelerate by modifying some of the
19 things that we failed to field and be in much better shape.
20 But really, we always take the element of time out of our
21 reckoning of our military posture. So that is why we are
22 where we are today.

23 Senator Ernst: Exactly. Thank you very much.

24 Thanks, Mr. Chair.

25 Chairman McCain: Senator King?

1 Senator King: Thank you, Mr. Chairman.

2 All of you have testified in one way or another about
3 one of the important features of a new strategy is the
4 dispersement of assets, a distribution somewhat across the
5 country. I do not question that strategically except that
6 it puts a much greater strain on communications. The tide
7 of the Civil War turned when Lee lost his ISR, otherwise
8 known as Jeb Stuart, at the Battle of Gettysburg. As we
9 distribute, I am just worried about our communications,
10 cable and satellite principally, being disrupted on the
11 first day, and with a distributed system, then you have a
12 lot of autonomous units without necessarily the command and
13 control that can put them effectively into the field.

14 Your response?

15 Mr. Ochmanek: A very good point, Senator King. We are
16 constantly balancing between the efficiency of having small
17 numbers of lucrative targets out there and the survivability
18 of distributing the force in a way that makes it more
19 difficult to attack. And absolutely, distributing the force
20 places a premium on survivable communications and also
21 training that force so that they can operate in what we call
22 a low bandwidth environment. Our analysis suggests that
23 with modest investment, we can assure ourselves of having at
24 least minimal communications with disbursed forces even in
25 highly jammed electronic warfare environments. But there is

1 a culture dimension to this, as well as a technology
2 dimension, and learning how to operate in that low bandwidth
3 environment where you are not getting massive amounts of
4 data from higher headquarters but still being effective is
5 part of the solution.

6 Senator King: Do others have thoughts on that issue of
7 communication?

8 Mr. Thomas: I would just add that we have a huge
9 opportunity in places like Japan to move from wireless
10 communications to go to buried fiber. We can have very,
11 very secure communications links between distributed cluster
12 bases across the country and our ability to immediately
13 disperse aircraft out not only to military bases but also
14 potentially to civil airfields and then to be able to net
15 them together with buried fiber that is very hard to attack
16 is a potential advantage that we have and we could exploit.

17 Senator King: Let me change the subject for a minute.
18 We have been talking principally about peer adversaries and
19 those kind of conflicts. And yet, the real conflict that we
20 have faced over the last generation has been asymmetric,
21 non-state actors, terrorists, lone wolves. That is an
22 entirely different kind of adversary. And what has bothered
23 me -- and I have been going to these hearings in
24 Intelligence for 4 years, and we are engaged in a kind of
25 international whack-a-mole where we are trying to kill the

1 hydra and it keeps growing back.

2 Should we not also be talking about a much more
3 vigorous, strong, focused information war with this Islamic
4 terrorist faction that is so dangerous? For example, I
5 think in 1998 we did away with USIA. And it drives me crazy
6 that we are the country that invented Hollywood and
7 Facebook, and yet we are losing the information war. I see
8 a lot of nods. For the record, could you say yes?

9 Mr. Clark: I would say, obviously, the information war
10 involves being better at doing public diplomacy. But also
11 part of the information war is defeating the adversary out
12 in the field.

13 Senator King: You cannot kill an idea with a gun.

14 Mr. Clark: Right, but you can start to erode the
15 viability of that idea by demonstrating that it does not
16 have an effect in the end. So if you can show the terrorist
17 acts that are attempted and fail or that the IS troops are
18 dying and losing in the field, that is part of the
19 information campaign, and then you have got to communicate
20 that to the potential recruits they are trying to seek.

21 Mr. Donnelly: A couple things.

22 First of all, you can kill an idea with a gun. The
23 counter-Reformation was killed because it failed militarily.
24 Spain's bid or the Hapsburg bid to dominate Europe was
25 defeated on the battlefield by both Catholic and Protestant

1 powers.

2 Secondly, again abstract out the phenomenon of Islamic
3 terrorism from the geopolitical -- the struggle for power in
4 the Muslim world, the Arab world -- chose your term of art--
5 is again bound to be misleading. And that leads you to not
6 only whacking moles but whacking the wrong moles. So
7 putting war back in its political context would be the most
8 clarifying thing that we could do especially in the Middle
9 East.

10 Senator King: But war does not always necessarily --
11 when you use the term "war," you are not necessarily, at
12 least in this day and age, talking about nation states.
13 That is the conventional thought of war.

14 Mr. Donnelly: In the period of the 17th century, the
15 wars of the Reformation and counter-Reformation were
16 conducted not -- there were nation states involved, but
17 there were what we would describe as terrorists. You know,
18 we could use the very same language to describe that
19 conflict as we use today to describe the conflict in the
20 Middle East.

21 Senator King: Perhaps there are some lessons we could
22 take from that period.

23 Mr. Donnelly: Well, history is good.

24 Senator King: Thank you.

25 Thank you, Mr. Chairman.

1 Chairman McCain: Senator Sullivan?

2 Senator Sullivan: Thank you, Mr. Chairman.

3 And, gentlemen, thank you for being here. Your
4 testimony is very helpful.

5 I just have one question. I think a number of us have
6 to go vote. But it is about missile defense and about the
7 recent threats, the growing threats, the inevitable threats--
8 - let us face it -- of North Korea. And this is all
9 unclassified. It is not if but when he is going to be able
10 to range the continental United States with an
11 intercontinental ballistic missile, likely with a nuclear
12 intercontinental ballistic missile. That is going to happen
13 at some point. You know, the classified estimates are a
14 little bit nerve-racking. And he is already being able to
15 range places like my home State of Alaska -- the North
16 Korean leadership.

17 Do you think we need to do more on missile defense to
18 buy us an insurance policy if you have a leader of a rogue
19 nation who is trying to shoot one or two nuclear missiles at
20 the United States and to be able to say, hey, we are
21 definitely going to shoot this down and then if you do this,
22 we will massively retaliate? What should we be doing? I
23 think we are not doing nearly enough on missile defense, but
24 given the threat, what do you think we should be doing? I
25 just want the answer focused on missile defense. I know

1 there is a whole other dimension of what we should be doing
2 on North Korea.

3 Mr. Donnelly: As a matter of missile defense, I mean,
4 the North Koreans still have liquid fuel missiles. So they
5 need to bring it out of the garage and put gas in it. We
6 should figure out how to find that missile on the launch pad
7 and destroy before it is launched.

8 Mr. Ochmanek: But we have to assume that one day they
9 will also have a solid fuel mobile missile that we cannot be
10 confident -- I think this is one area, Senator, where we are
11 ahead of the power curve with our national missile defense
12 ground-based interceptor systems. As I understand it, the
13 focus now is on improving the reliability of each of those
14 missiles and their guidance systems, which were admittedly
15 kind of rushed into initial operational capability. So
16 continuing to focus on that, making sure they are reliable
17 as well.

18 But I agree that this is not a nation that we can be
19 confident of being able to deter from using nuclear weapons
20 through the threat of retaliation because of their very
21 weakness and the unpredictability of this leadership.

22 Senator Sullivan: Anyone else on missile defense as it
23 relates to North Korea?

24 Mr. Clark: Clearly, this is one case where the ground-
25 based defenses in the United States make sense because it is

1 a small-scale threat that could be dealt with those kind of
2 capabilities, and it is one that is not likely to be
3 deterred with the threat of retaliation because there is not
4 much for us to gain by immolating North Korea.

5 Senator Sullivan: Great. Thank you, gentlemen.

6 Senator Reed [presiding]: Thank you very much, Senator
7 Sullivan.

8 I am informed that Senator Blumenthal and Senator
9 Strange would very much like to come and ask questions. So
10 I have the opportunity to bedevil you a bit, and I will take
11 that opportunity.

12 One of the issues that we face -- we have talked about
13 how we grow the force, how we make it more ready, and how we
14 do the innovation. On the innovation side, so much seems to
15 be now in the commercial sector, particularly with cyber,
16 some electronic products, autonomous vehicles. And it is
17 not the old industrial model of an arsenal, a contract for
18 the Department of Defense doing the cutting-edge work, a
19 national laboratory doing the really great work. And I
20 think this is important.

21 How do we make the connection with the commercial
22 sector? What are the obstacles? How do we do it better?
23 All your comments would be appreciated.

24 Mr. Ochmanek: Senator Reed, I am not an expert on
25 acquisition or industrial policy, but I can only agree with

1 you that much of the dynamism in these areas is happening in
2 the private sector. I know Secretary Carter and Deputy
3 Secretary Work have reached out to Silicon Valley to improve
4 our connections there between them and the Department of
5 Defense.

6 The point I would make from a force planning standpoint
7 is we have to assume that any advances we make in exploiting
8 these kinds of information technologies for our armed forces
9 are not likely to be monopolized by us. Right? Those
10 technologies are available through private R&D throughout
11 the world. So these are not long-lasting advantages we are
12 going to have. And so we are interested in finding ways to
13 use red teams in a more vigorous way to ensure that we can
14 anticipate what our adversaries will do in response to these
15 kinds of developments.

16 Senator Sullivan: I have noticed the return of my
17 colleagues. So I will suspend that wonderful line of
18 questioning. And, Senator Strange, on behalf of Chairman
19 McCain, you are recognized.

20 Senator Strange: Thank you very much, Senator.

21 And I want to express my appreciation to the panel for
22 being here today.

23 I am very pleased to serve on this committee. It is my
24 first hearing. I respect the long tradition of
25 bipartisanship on this committee. The armed services,

1 military is critical to my State. I am following in the
2 footsteps of Jeff Sessions, but I have a rich military
3 tradition in my family. Senator Reed and I talked about my
4 uncle who went to West Point, the contribution of our State.
5 So I am highly concerned with the issues you have raised. I
6 am very new, obviously.

7 But the one thing that I have learned in the short time
8 I have been here is the urgency of these needs. And so the
9 question I have for you -- and I know Mr. Donnelly addressed
10 it. There are two or three things that you had on your
11 urgency list. Is there anything else -- and feel free,
12 anyone, to comment on this -- that the Pentagon could do
13 immediately that would address some of these urgency needs?
14 So much of what we talk about has a long horizon. But is
15 there anything in particular you would like to add that you
16 have not already mentioned for the record that we could be
17 thinking about immediately to address some of these issues?

18 Mr. Ochmanek: One thing we have not really mentioned
19 is the importance of training and exercises, both as a way
20 of improving the facility of our forces but also
21 demonstrating to adversaries that we have capabilities they
22 may not have taken into account. So we have been very
23 predictable over the last few decades of where we operate in
24 the Western Pacific, out of Okinawa, out of Guam. If
25 airplanes start showing up in small numbers unpredictably at

1 places where we have not been before -- and here the
2 Philippines is the perfect place, if we can ever get the
3 politics right again. But Australia, Southeast Asia -- you
4 know, here are eight airplanes that are going to operate for
5 2 weeks and demonstrate the capability to sustain a high
6 tempo of operations from an austere base. That is a
7 cultural change for our United States Air Force. The
8 Marines are better at it than the Air Force. That would
9 alter the deterrent calculus of China because all of a
10 sudden they have uncertainty about how we are going to
11 operate and what they have to contend with in war. That is
12 just one small thing.

13 Senator Strange: Thank you.

14 Mr. Thomas: I would just pick up on Dave's
15 demonstration point and say it is also thinking about
16 surprising ways in which we can repurpose some of the forces
17 that we have in existence today. So the classic example is
18 the SM-6 missile, which is designed for air defense but
19 could also be used in a surface attack role. We could think
20 about the use of bombers firing air-to-air weapons. We
21 could think about submarines and novel missions they could
22 perform or demonstrate perhaps involving the suppression of
23 enemy air defenses. So there are a lot of ways we could be
24 perplexing and surprising our potential adversaries and
25 changing their calculations by demonstrating that many of

1 our systems could be used in ways they have not anticipated.

2 Mr. Donnelly: Sir, I think there are a number of
3 things we could do to better harvest the technologies and
4 the programs that we did not bring to fruition. One thing
5 that is very obvious is the Navy's cruiser modernization
6 program. We were going to upgrade the Ticonderoga class but
7 then put half of them in mothballs so that we can have
8 another 10 years' worth of cruisers. Again, if time is an
9 important part of your calculation, bringing that extra
10 capability into the fleet earlier rather than saving it for
11 a rainy day makes a heck of a lot of sense.

12 Also, take, for example, the very troubled Zumwalt
13 program. It was just poorly conceived from the start. It
14 is a big boat with a big engine in it. I have been told it
15 is technologically possible to turn that -- to equip it with
16 electromagnetic guns or directed energy weapons, which would
17 be a very effective fleet air defense platform. Again, I am
18 not enough of an engineer or a budgeteer to figure out what
19 that would cost, but again, if we are looking about how to
20 get quick return on investment beyond just making what we
21 have got a little bit better, there are modifications like
22 that that we could make that would bring greater capability
23 and greater capacity to the table faster.

24 Mr. Clark: I would say to build on what Jim and Dave
25 talked about, the idea of experimentation -- it is not just

1 demonstrations, but the idea of going out and doing
2 experiments to be able to figure out how to employ these
3 modifications to existing weapons. The OSD's Office of
4 Strategic Capabilities is doing a lot of really good work in
5 terms of modifying existing weapons to make them usable for
6 other types of missions, and then doing experiments to say,
7 well, how is that going to work and come up with the
8 operating concepts and the tactics and publish those. Those
9 are things you do within the next 2 years and you would have
10 new capability. So that is an urgent thing that we could do
11 now.

12 Senator Strange: That is very helpful to me. And I
13 take away this urgency message. It comes through loud and
14 clear. And the repurposing concept is very helpful and
15 encouraging. I am already over my time. Mr. Chairman, I
16 apologize. My first appearance at the committee. Thank
17 you.

18 Senator Reed: Thank you, Senator.

19 On behalf of Chairman McCain, Senator Blumenthal.

20 Senator Blumenthal: Thanks, Senator Reed.

21 As you know, we are moving toward a new world with new
22 technology. You know better than we do what those new
23 technologies may be. And one way to address this challenge
24 is the third offset strategy, which seeks to improve the
25 Department of Defense's operational concepts, organizational

1 constructs, and technological capabilities to restore United
2 States power projection and deter conflict. Deputy
3 Secretary Work, for example, has been heavily involved,
4 emphasizing that it is about, quote, preserving peace, not
5 fighting wars. End quote. As we invest in these new
6 technologies, we need people who can help us develop and
7 implement them, and we need to be able to recruit the right
8 talent.

9 Do any of you have any thoughts about how we actually
10 recruit that talent that we need so desperately in these new
11 technological areas?

12 Mr. Thomas: Senator, it is a great question. One area
13 that I think this committee might explore further is
14 repurposing and kind of re-imagining the Reserve component
15 of the armed forces. For a lot of things we are talking
16 about, you are looking for creativity and ingenuity. You do
17 not necessarily need that 40 hours a week. You need it
18 periodically. You almost want kind of your mission
19 impossible set of resumes that you can flip on the table and
20 say I need this guy, this guy, and this woman over here to
21 go as a special team and think about a new concept, think
22 about the application of a new technology, think about how
23 they can confound an adversary. And we have this almost
24 inexhaustible pool of talent in the United States, both
25 technologically, in the humanities, in terms of the ethnic

1 heritages of Americans, and I do not think we are nearly
2 exploiting that sufficiently.

3 Mr. Clark: One thing I think we need to do is
4 carefully look at the technologies that are being pursued in
5 the commercial sector that we may harvest our own. And
6 there are some great examples of that in communications in
7 particular, the work that Google is doing with the *Loon
8 Balloon program is a great example of a technology we can
9 just harvest ourselves without having to develop and then
10 things that we develop uniquely in the military and try to
11 attract the engineers into those fields where they want to
12 do interesting work but they do not want to go do
13 communication technology work for DOD when they can go do it
14 for Google. But if you want to do work in electronic
15 warfare or electrical engineering that relates to electronic
16 warfare or undersea warfare on acoustics, then the military
17 is the main place you are going to be able to do those kinds
18 of technology developments. So if we clearly strategize our
19 technology development to focus on things that are uniquely
20 military, we are more likely to attract those engineers who
21 can only come to you to be able to do that work.

22 Senator Blumenthal: Thank you.

23 Mr. Donnelly: Sir, if I can say, again, I sound like
24 such a knuckle-dragger here I am sure. But if we could get
25 some new stuff in the hands of soldiers and sailors and

1 airmen and marines, they would figure out amazing ways to
2 employ it.

3 Things that others have talked about earlier about
4 operating aircraft in a dispersed environment -- that is
5 what the Army and the Marines already do with their
6 helicopters. Doing it with an everyday stealthy strike
7 aircraft -- we do not even know what that would mean.
8 Again, we have very talented and innovative people who wear
9 the uniform, again, not for a paycheck but because of a
10 whole host of other reasons. And if we could just get them
11 some new tinker toys to play with, they would build some
12 amazing structures out of them.

13 The adaptation that the force made in the course of
14 Iraq and Afghanistan was quite remarkable. Again, if we
15 could just -- I think it has mostly been a problem of the
16 government and the nation as a whole that we are not giving
17 the people the tools of innovation, not a question of talent
18 but of capability and capacity.

19 Senator Blumenthal: And speaking of new technology, I
20 am assuming that all of you on the panel believe that we
21 need to move ahead with the Columbia class submarine, which
22 is going to be critical to our nuclear deterrent program as
23 a matter of stealth and survivability and strength, and also
24 the F-35, the next generation of fighter aircraft.

25 My time is about to expire. So if any of you disagree,

1 I hope that you will submit responses in writing. But there
2 is continuing controversy about at least the F-35. And all
3 of us agree we have to drive down the cost but still proceed
4 with that aircraft. If any of you have thoughts
5 specifically about either of those two programs, I would
6 very much welcome them in writing rather than go over my
7 time now.

8 Thank you, Mr. Chairman.

9 Senator Reed: Thank you very much.

10 Gentlemen, thank you for your excellent testimony and
11 not only that, for really a lifetime of contribution to a
12 very serious and provocative intellectual debate about our
13 national defense policy which aids us immensely and
14 ultimately aids the troops in the field, which we are all
15 committed to do. So thank you very much.

16 On behalf of Chairman McCain, let me call the hearing
17 adjourned. Thank you.

18 [Whereupon, at 11:13 a.m., the hearing was adjourned.]

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