Statement of

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On the State of the Command

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America as a Superpower

The United States of America is the world's only superpower. The Nation maintains this status because of our global influence and ability to project power around the world at a moment's notice. United States Transportation Command (USTRANSCOM) is a critical element in this national capability. The men and women who make up this command provide an unparalleled expeditionary capability and underwrite the Nation's ability to rapidly respond to emerging crises. A global, warfighting combatant command (CCMD) with functional responsibilities, USTRANSCOM's role in projecting and sustaining power is the cornerstone of the Joint Force's efforts to meet national policy objectives.

Established in 1987, United States Transportation Command's marked its 30th Anniversary in 2017. Operationalized during Operations Desert Shield and Desert Storm, the command now delivers global mobility solutions every day in both peace and war through its component commands: Military Surface Deployment and Distribution Command (SDDC), Military Sealift Command (MSC), Air Mobility Command (AMC) and what I call our fourth component, the commercial industry. Together, with our subordinate commands, Joint Transportation Reserve Unit (JTRU) and the Joint Enabling Capabilities Command (JECC), our Total Force team of Active Duty, Guard, Reserve, civilians and contractors, remains postured to preserve the Nation's comparative advantage and provide the President a broad range of options today, and tomorrow.

In the past year, USTRANSCOM bolstered American influence around the globe. We exercised our deployment capabilities, sustained combat operations, and managed the expansive Joint Deployment and Distribution Enterprise (JDDE). USTRANSCOM's team of Joint

Warriors also enabled the movement of America's sick and wounded to medical treatment facilities worldwide, relocated thousands of families, and responded to every Geographic Combatant Command's requirements without fail. We performed 33 Brigade Combat Team (BCT)-sized movements, shortening deployment timelines and demonstrating our ability to deliver a decisive force at the time and location of our choosing. When hurricanes ravaged Texas, Florida, Puerto Rico, and the U.S. Virgin Islands, our joint enabling and strategic mobility assets deployed to provide critical capabilities including planning support, aeromedical evacuation, and life-saving supplies. Our efforts demonstrated the Nation's resolve and strengthened partnerships worldwide.

Mission

The President of the United States designated USTRANSCOM's five primary roles and responsibilities through the 2017 Unified Command Plan (UCP). The UCP established USTRANSCOM as the **Joint Deployment and Distribution Coordinator (JDDC),** merging and expanding our previous roles as Distribution Process Owner and Global Distribution Synchronizer. This evolution of our responsibilities provides extended authorities to coordinate operations and planning across all domains spanning the JDDE. As DoD's **Single Manager for Transportation**, USTRANSCOM provides common user and commercial air, land, and sea transportation, as well as terminal management and air refueling in support of deployment, employment, sustainment, and re-deployment. We are responsible for providing joint sourcing solutions for all mobility forces and capabilities, in close coordination with the other CCMDs in our role as the **Mobility Joint Force Provider**. Enabling America's unprecedented patient movement capability, we arrange timely and safe movement for the Nation's ill and injured in

support of the CCMDs, other US government agencies, and key international allies and partners as the **DoD Single Manager for Patient Movement**.

Our fifth and final UCP responsibility is the provision of **Joint Enabling Capabilities**, performed by the JECC. The JECC provides alert postured communications, planning, and public affairs capabilities to accelerate the formation of Joint Force headquarters. Delivering high-impact experts with knowledge in joint warfighting functions, the JECC supports SECDEF-directed deployments as well as immediate Global Response Force (GRF) missions. This Total Force team offers a unique capability not replicated by any other organization within DoD.

The Contemporary Security Environment

USTRANSCOM has been successful for 30 years, but the Nation is at an inflection point, and we must evolve to remain viable in the future. Volatile geopolitics, shifting demographics, and emerging technologies are changing the character of war. These considerations are changing societies and the way we fight – they are also changing why and where wars are fought, and who is fighting them. Today, every domain is contested, with conflict unconstrained by Geographic Combatant Command boundaries or principles of sovereignty. Lower barriers of entry are expanding our adversaries' access to disruptive technology, placing our technological superiority at risk. Mobility forces may be required to transport and sustain US and allied forces while under persistent multi-domain attack, including deception and data manipulation in cyberspace. We face the most complex and volatile security environment in recent history. Our past successes will not ensure success tomorrow.

The Joint Force has taken domain dominance for granted for 70 years, but we can no longer assume logistics will arrive in theater unchallenged by our adversaries. In an effort to better understand contemporary threats and operate effectively in the current context,

USTRANSCOM hosted a series of Contested Environment Wargames and Summits. Lessons learned from these events drove changes in how we plan for attrition, cyber, mobilization, authorities, access, and command and control. We now consider the attrition of organic sealift and airlift fleets in our planning and requirements analysis, as well as the need for global mission command of disparate mobility forces. A growing realization that the homeland is no longer a sanctuary led us to plan for denied access to our own strategic nodes, as well as those abroad. Our analysis revealed that an adversary can derive immense strategic benefit from cyber operations alone. The reality of our time is that adversaries no longer have to stop us with bombs or bullets; all they have to do is slow us down with ones and zeroes. Yet our preparation for these challenges cannot exist solely on paper. We must make some tough fiscal decisions today, prioritizing readiness and modernization to assure our strategic advantage tomorrow.

Our Global Perspective

In a contemporary environment filled with uncertainty and rising geopolitical tensions, the logistics enterprise must always be ready. Key to this preparedness is USTRANSCOM's effort to set the globe for logistics on behalf of the Secretary of Defense and the Chairman of the Joint Chiefs of Staff, continuously shaping the Nation's ability to respond to simultaneous threats within a trans-regional, multi-domain, and multi-functional security environment. With our global perspective and responsibilities, this command is uniquely postured to balance resources worldwide and understand the risks associated with surging and swinging mobility assets between theaters.

Setting the globe for logistics involves balancing resources historically employed in a theater-centric paradigm and regularly using the worldwide network of modes, nodes, and routes to ensure the network remains active and resilient. Balancing and using the globe builds

resilience within the JDDE, maximizes scarce strategic transportation assets, and strengthens relationships with our fourth component, allies, and strategic partners. Balance requires having the proper authorities to position and reposition mobility assets, thus enhancing agility, mitigating risk across the JDDE, and increasing the President's decision space. Effectively using the globe means unshackling ourselves from our habituated uses of the JDDE. The previous practice of only using finite strategic nodes for deployment and sustainment operations limits the Joint Force's flexibility to compete over the long term and deter conflict in multiple regions, while preparing to win in any war. We must implement new and innovative ways of using the globe by fostering strong partnerships and agreements with commercial industry, allies, and other partners to build network resiliency, expand our competitive space, and proliferate our power projection capabilities. When USTRANSCOM sets the globe, it creates options… and options create opportunities.

Challenges and Opportunities

The Secretary of Defense has deemed his number one priority, "Restoring Readiness as We Build a More Lethal Force." As we restore readiness and increase lethality, the resources necessary to transport and sustain the Joint Force must keep pace. Current operations and on-going sustainment requirements engage a significant portion of the total force, limiting capacity to surge or meet increased deployment and distribution demands. The DoD has historically viewed the Reserve Component as a strategic reserve. However, capacity shortfalls in the Active Component required the DoD to leverage Guard and Reserve assets to maintain steady-state activities for nearly three decades. Several conditions exacerbate this concern; fiscal uncertainty, aging fleets, workforce shortages, and an increasingly contested maritime domain. Despite the many challenges of our time, global integration, emerging technologies, and the collective

experience of our mobility forces present opportunities to strengthen our distribution networks and improve the effectiveness of our logistics operations while decreasing risk to force. Whether to pursue opportunities or overcome challenges, we must continue to invest in key areas to secure victory on tomorrow's battlefields. These areas fall into the following four broad categories, which mirror USTRANSCOM's priorities: Readiness, Cyber, Evolving for Tomorrow, and Workforce Development.

Readiness: State of the Command

USTRANSCOM stands ready to deliver in support of national objectives today. However, as we look to the future, contested domains and fiscal uncertainty present a threat to the viability of the JDDE. If we fail to address a number of these challenges in the coming years, the strength on which the Nation has historically relied will no longer be there when needed. Specifically, we must address issues of capacity, availability, and proficiency within USTRANSCOM's air, land, and sea components; shore up commercial industry's capacity and security gaps; and provide the necessary resources to rebuild readiness and modernize the mobility force.

Fiscal Uncertainty

The Budget Control Act (BCA) and recent Continuing Resolutions prevent the force from adequately addressing our most pressing readiness concerns. These legislative measures force the Services to prioritize immediate operational needs over prudent long-term planning and investment, eroding readiness over the long term. Specifically, the BCA prevents the Services from adequately manning, training, and equipping their forces for contemporary challenges, ultimately threatening USTRANSCOM's ability to deploy forces when necessary. After more than 16 years of conflict, rebuilding readiness and modernizing the force is a national imperative.

However, timely and predictable funding is essential if we are to make progress toward meeting tomorrow's demands; the uncertainty that comes with government shutdowns and continuing resolutions only delays these efforts.

Sealift

When the United States goes to war, USTRANSCOM moves 90% of its cargo requirements with the strategic sealift fleet, which consists of government-owned ships augmented by the commercial U.S.-flagged fleet. The ability to deploy a decisive force is foundational to the National Defense Strategy, as the size and lethality of the force is of little consequence if we are unable to project power in the pursuit of national objectives. Therefore, the readiness of the entire strategic sealift portfolio, both organic and commercial, remains the top priority for USTRANSCOM.

USTRANSCOM's Navy component, Military Sealift Command (MSC), controls the organic strategic sealift ships that deliver logistics and humanitarian relief, move military equipment, supply combat forces, and forward position combat cargo around the world. MSC also assumes operational command of the Maritime Administration's (MARAD) Ready Reserve Force (RRF) ships during periods of activation. However, our organic sealift capabilities will degrade rapidly over the coming years if we fail to pursue a responsible recapitalization strategy. Although the Navy added service-life extension funding for 22 vessels in POM19, 30 of 65 Roll-on/Roll-off (RO/RO) vessels and all 11 special capability vessels could age out over the next 15 years. As further directed by the FY18 National Defense Authorization Act (NDAA), USTRANSCOM is working with the Navy on a comprehensive recapitalization plan which includes acquiring used vessels, extending the service life of able vessels, and building new ships – all three of which are required to stabilize the fleet.

The 2018 NDAA authorizes the Secretary of Defense to purchase two used vessels. This provision was intended to serve as a bridging strategy within the recapitalization program but is insufficient to bridge the impending capacity gap. Based on the estimated build rate and size of newly constructed vessels, 24 additional "buy-used" authorizations are needed by 2030. Available capacity for used vessel acquisition presents a prime opportunity to pursue this strategy.

As a result of changes in market conditions within the maritime industry, USTRANSCOM will be the only remaining owner of steam ships in the United States by 2020. We possess a sufficient number of certified steam engineers to operate this legacy vessel today. However, the pool of certified steam engineers will rapidly drop in number and proficiency as steam-powered commercial vessels leave service. Due to this diminishing capability, recapitalization of steamships with newer technology, such as diesel ships, is a high USTRANSCOM priority.

Opportunities to regularly exercise the organic Strategic Sealift Fleet ensures MSC maintains the highest state of readiness. Activating ships for exercises and sea trials is the primary mechanism for assessing RRF and MSC Surge Fleet readiness. These operations allow MSC and MARAD to better assess changes in material degradations, vessel and Mariner availability, and corresponding risk to mission accomplishment. However, in a fleet of 61 vessels, current resourcing only allows for 10 training activations per year. We regularly pursue additional opportunities to integrate our organic fleet into DoD-supported exercises and support unit-level missions, including participating in exercises with other CCMDs . We will continue to pursue means to increase activations and extend sea trials, where possible, to get these ships underway with more frequency and improve the overall readiness of the fleet.

An aging organic sealift fleet coupled with a reduction in U.S.-flagged vessels threatens our ability to meet national security requirements. The U.S.-flagged fleet has been in steady decline since World War II as a result of decreasing demand and the rising cost of the U.S.-flagged fleet compared to international fleets. In 1951, 1,288 U.S.-flagged ships were registered in the United States. In 1990, the fleet was down to 408 ships, and in 2013 just 106. Today, 82 U.S.-flagged ships operate in international trade, representing a 25% reduction in just the last 5 years. This reduction in actively trading U.S.-flagged vessels correlates to a decline in the numbers of qualified Merchant Mariners, the workforce required to deliver U.S. Forces to war. If the fleet continues to lose ships, a lengthy, mass deployment on the scale of Desert Shield/Desert Storm could eventually require U.S. Forces to rely on foreign-flagged ships for sustainment.

The U.S.-flagged commercial fleet is vital to the Joint Force's ability to accomplish its mission. USTRANSCOM's relationships with U.S.-flagged sealift partners are formalized through the Voluntary Intermodal Sealift Agreement (VISA) and the Maritime Security Program (MSP). Since their establishment in 1996, participation in these programs by privately-owned U.S.-flagged commercial shipping has proven a cost-effective means to assure access to sealift capability, capacity, and worldwide networks. The Merchant Marine Act of 1920, or the Jones Act, and the Cargo Preference Act are intended to ensure a baseline of ongoing business to support our inter-coastal shipping capacity and maintain a market for U.S. industrial shipyard infrastructure to build, repair, and overhaul U.S. vessels. However, the dwindling size of the domestic U.S. inter-coastal shipping fleet demands that we reassess our approach to ensure that the U.S. retains critical national security surge sealift capabilities. We also may need to rethink policies of the past in order to face an increasingly competitive future.

The MSP provides an intermodal and logistics capability outside of the DoD portfolio that would be cost prohibitive to replicate. MSP assures access to 60 militarily useful vessels, the mariners who crew those ships, and commercial carriers' global networks and infrastructure. Without this program, DoD's asymmetric advantage in logistics would be put at significant risk as many of the vessels currently in the program would reflag under foreign flags and no longer participate in VISA. In this scenario, DoD would be forced to augment organic capacity with foreign-flagged vessels to deploy and sustain the Joint Force. During Operation Desert Shield, 13 of 192 (7%) foreign-flagged vessels declined to enter the area of operations, while U.S.-flagged vessels provided steadfast support. Although the security environment today is more complex than it was 27 years ago, MSP remains a critical enabler in our ability to execute the National Defense Strategy (NDS), and it must continue to evolve. We are reviewing MSP this year to ensure the program's next evolution is best suited to support national defense.

Along with declining capacity, we are also concerned about the pool of current and qualified licensed Merchant Mariners who crew America's ships. If the international U.S.-flagged fleet continues to decline, the Merchant Mariner labor pool will also decline, putting at risk our ability to surge forces overseas and sustain a protracted conflict with U.S. Mariners. Although the qualified Mariner labor pool industry-wide is adequate to support a surge requirement today, a protracted need for Mariners would stress the labor pool beyond acceptable risk. The DoT, with DoD support, must seek innovative ways to recruit and retain sufficient Mariners to sustain sealift operations across the full spectrum of conflict. A healthy and viable U.S.-Flagged Fleet remains the foundation for a suitable Merchant Mariner pool.

Airlift/Air Refueling

USTRANSCOM's air mobility forces provide the Joint Force with a distinct advantage, projecting and sustaining immediate power in response to crises and contingencies around the world, any time the Nation calls. USTRANSCOM's Air Component, Air Mobility Command (AMC), provides airlift, air refueling, aeromedical evacuation, and air mobility support functions in support of all CCMDs by leveraging a team of Total Force Airmen and commercial partners. Although the air mobility enterprise stands ready to deliver an immediate force tonight, we must address several readiness concerns in our airlift and air refueling capabilities, as well as our patient movement system, to ensure we are able to meet our defense objectives in the future.

America's air refueling fleet is the most stressed of our air mobility forces. The combination of an aging fleet, increasing demand, and global tanker distribution puts a significant strain on this scarce national resource. At an average age of 61 years old, the KC-135 remains the workhorse, comprising 87% of the tanker force. Investments are necessary to allow the aircraft to continue to operate in a changing environment and stem the decline in aircraft availability. Nonetheless, as the fleet ages, sustainment costs and dwindling availability rates will eventually become untenable. The KC-10, which served as a key part of the tanker force for decades, is programmed for retirement in FY 19-24. The current tanker requirement, set at 479, was based on the 2013 Mobility Requirements and Capabilities Study (MRCS). The 2018 NDAA-directed Mobility Requirements and Capabilities Study (MCRS-18) will reflect requirements articulated in the new National Defense Strategy and address the current and future levels of risk to the air refueling mission, which may drive the Department toward increasing air refueling capacity for CCMDs. However, we already know the convergence of an aging air refueling fleet with protracted KC-46 production puts the Joint Force's ability to effectively

execute war plans at risk. Day-to-day, high levels of air refueling fleet utilization are approaching a point that challenges the Total Force to sustain current levels of support. Thus, the tanker fleet's end strength will require careful synchronization between KC-10 and KC-135 retirements and KC-46 production and delivery to sustain current force projection capabilities.

The uneven geographic allocation of the tanker fleet requires an agile command and control construct to balance this high-demand asset across GCCs. The practice of stockpiling resources in specific regions with no single organization possessing the capacity and authority to dynamically reallocate assets creates deficiencies in some theaters and surpluses in others. Global sourcing solutions, on the other hand, generate capacity out of multiple regions to support emerging crises in prioritized theaters.

To that end, the SECDEF directed USTRANSCOM, through the 2017 Global Force Management Allocation Plan (GFMAP), to manage in-theater air refueling assets that exceed the minimum required by Geographic Combatant Command (GCC) war plans. However, legislation enacted in 2011 reserves a disproportionate number of theater-assigned tankers for USPACOM and USEUCOM, limiting USTRANSCOM's ability to balance scarce resources against total requirements. Optimal allocation of assets requires a trans-regional perspective and the flexibility to manage mobility forces at an enterprise level. Given its global visibility, command and control resources, and geographic impartiality, USTRANSCOM is uniquely suited to manage the entirety of the tanker fleet. Relief from legislation that restricts changes to operational control of tanker forces in USPACOM and USEUCOM would allow USTRANSCOM to optimize the air refueling fleet and mitigate risk across the Joint Force.

The Operational Support Airlift (OSA) - Executive Airlift (EA) enterprise provides vital transportation for senior DoD and Federal officials, including the President, Vice President,

Secretary of Defense and Presidential Cabinet. The EA fleet remains a necessary asset, providing our senior military and government leaders with in-flight command, control, and communication capabilities as well as dedicated, secure transportation. Given its high-visibility and national level impacts, USTRANSCOM and the Joint Staff are reviewing options for long-term management and oversight of the EA enterprise.

The Air Force has made key investments in upgrading, modifying, and recapitalizing its airlift fleet, and we must stay the course. The last of 52 C-5M aircraft is scheduled for delivery in 2018 through the Reliability Enhancement and Re-Engineering Program (RERP). Similarly, advances in the C-17 fleet are enhancing its viability through the development of high altitude airdrop capabilities and improved secure communications for portions of the fleet. The Air Force also modernized the tactical airlift fleet through acquisition of new C-130J aircraft and various upgrades to the Air Force Reserve Command and Air National Guard C-130H fleets. The health of the airlift fleet remains strong and continues to improve through these timely upgrade and modification efforts.

However, the growing pilot shortage challenges our ability to sustain current force projection levels. Roughly 30% of the Air Force's pilot shortages come from air mobility platforms. By FY19, we project mobility manning shortfalls will reach or exceed about 650 pilots. A nearly insatiable demand for commercial pilots, coupled with a high OPTEMPO, is leading to a larger-than-expected number of pilots leaving the service. Last year, the Air Force took actions to mitigate the loss of experienced pilots and increase production of new pilots. We expect to see initial results from these efforts by FY20.

Today, the mix of Active to Reserve Component resources in USTRANSCOM means the command relies on the Reserves and National Guard to fulfill war-time requirements. For

example, more than 50% of AMC's airlift and air refueling assets are in the Reserve Component. The current force balance creates component command dependence on National Guard and Reserve units to volunteer for activation. Furthermore, for the past three decades, the Reserve Component has been used as a reliable and trustworthy asset to sustain day-to-day operational requirements, a function for which, historically, they were not resourced or structured. Funding increases in FY18 and FY 19 will alleviate some of the strain on the force but the disproportionate force mix may still have broader implications across the department. The Department's vigilance is required to ensure the means support the ends against which the Services have aligned our Reserve Component.

Our Civil Reserve Air Fleet (CRAF) partners are critical to the success of our enterprise, and today, the CRAF program is healthy and fully subscribed to meet national security objectives. CRAF is a voluntary program by which U.S. air carriers are awarded government airlift business to assure access to commercial capacity during contingencies and emergencies. This resolute relationship has historically afforded our partners the opportunity to lift about 93% of all DoD passengers and 40% of DoD air cargo in direct support of our warfighters. As our 25 CRAF carriers remain in a steady state of readiness to support DoD cargo and passenger requirements, we are committed to maintaining a viable CRAF program to continue to meet national defense requirements.

Surface

When the Nation goes to war, American forces begin deployment operations using U.S. transportation infrastructure. USTRANSCOM relies on the DoT, along with other Federal and State agencies to ensure our roads, rails, and ports are capable of supporting the warfighter's deployment and distribution requirements. Our Army component command, SDDC, represents

the interests of the DoD to access and safely use both private and public transportation infrastructure and services. Today, these networks are capable of effectively deploying the Joint Force. However, it is imperative that we remember that our transportation infrastructure is not merely a medium for commercial and civilian use, it is a national strategic asset, critical to moving military members, equipment, and supplies in times of crisis.

Highways and railways are strategic links that serve as routes for the DoD to deploy military forces from fort to port and to project warfighting materiel from factories to foxholes. Currently, public road networks are capable of meeting DoD ground transportation needs while providing adequate access to commercial trucking capacity to meet current and anticipated surface transportation requirements. America's rail networks rapidly move large quantities of heavy equipment from military installations to ports of embarkation, a capability that is critical to national security. SDDC collaborates closely with the DoT and the railroads to assess the suitability of our rail networks (most of which are privately owned) to continue to support military needs. Although rail networks remain adequate, we face age-mandated retirements of some of our uniquely capable, DoD-owned railcars. We are developing a plan, in close cooperation with the Department of the Army, to replace this critical deployment enabler.

The health of America's strategic sea ports are also of vital national interest. There are 23 designated Strategic Seaports along our coasts – 17 commercial and 6 military – which serve as major springboards from which the Nation delivers diplomatic and military solutions around the world. The infrastructure of each of these ports, to include their cyber-enabled infrastructure, must be viable and resilient to allow the flow of equipment and cargo during times of conflict or distress.

Military Ocean Terminal Concord (MOTCO) on the West Coast and Military Ocean Terminal Sunny Point (MOTSU) on the East Coast are critical to DoD's ammunition distribution mission, and remain a top readiness priority. MOTCO, in particular, was identified as requiring increased investment due to aging infrastructure and lack of acceptable, ready alternatives to support ammo movement to the Pacific. The U.S. Army is in the process of a $300 million modernization program at MOTCO, to include construction of a new pier. We must continue to maintain and modernize both of these strategic seaports, as well as build capacity at other ports to enhance resilience, as their unique mission set underwrites the Joint Force's lethality.

Patient Movement

Today, USTRANSCOM operates the most robust patient movement system in the world, safely and efficiently moving America's ill and injured. Last summer, we completed our Aeromedical Evacuation Requirements Analysis to evaluate the number of aeromedical evacuation crews, Critical Care Air Transport teams, and patient movement equipment items required to move patients on time in a single scenario. Although we conduct patient movement without falter in the current operating environment, we found shortfalls in our ability to surge for large-scale conflict with mass casualties. We are currently working with the Air Force to determine the appropriate way ahead to mitigate these shortfalls.

Limitations on patient movement in a non-permissive context highlighted the need to develop interoperable, multi-modal solutions for joint casualty transportation. Current plans create a near dependence on airlift which may not be feasible to meet requirements depending on the scenario. Furthermore, as military medical facilities consolidate or close, the military infrastructure to support patient movement is increasingly strained. Insufficient access to en route medical care (transfer, staging, and treatment) at critical distribution nodes will further

challenge our ability to safely move expected numbers and types of casualties in future conflicts. Additionally, a decrease in CONUS-based health care capacity in the National Disaster Medical System (NDMS) partnership will further complicate our ability to move patients to the care they need.

The combination of insufficient patient movement personnel, equipment, infrastructure, and capacity significantly decreases the likelihood that our Joint Warriors with survivable injuries and illnesses will have the same high survival rates we have seen in recent conflicts. In partnership with the Joint Staff, we initiated a capabilities based assessment which will be completed this year. We are also working with the Services, the Joint Staff, and the National Health Enterprise to address these challenges.

Cyber

Threats in the cyber domain pose the greatest threat to our decisive logistics advantage. The return of great-power competition is characterized by activities in the so-called "gray zone." In this new normal, both state and non-state actors conduct persistent probes and malicious cyber activities, seeking to erode the U.S. military advantage and alter existing international order. The logistics enterprise is more susceptible to these malicious activities than other military organizations based on our unique relationship with commercial partners. Although logistical and operational planning generally takes place on classified networks, ninety percent of military logistics and global movement operations executed on unclassified commercial networks. This challenge is exacerbated by the inadequacy of implementing existing cybersecurity standards and the fact that DoD's extensive cyber protections do not extend to industry, critical vulnerabilities in our cyber security posture. Defending DoD information on those commercial networks goes beyond the authority of a single combatant commander. Mission assurance, particularly in

degraded and contested environments, requires a collaborative effort between the Department of Homeland Security, other national agencies, commercial industry, and the Nation's leading experts. We will not solve this problem alone.

In 2017, USTRANSCOM made strides toward hardening our overall cybersecurity posture in collaboration with commercial industry. We strengthened our partnerships through the National Defense Transportation Association (NDTA) with the inclusion of cybersecurity training programs for the entire enterprise. Moreover, several industry CEOs participated in our Cyber Roundtables, creating future options to improve national defense, incorporate commercial equities in the initial stages of contingency planning, and share information across domains. Learning from these venues, we began modifying existing Transportation Service Provider contracts to mandate compliance with the National Institute of Standards and Technology's (NIST) Special Publication 800-171, which governs the protection of covered defense information, including unclassified controlled technical information. Prior to this update, transportation contractors were not required to upgrade security systems or comply with threat reporting measures. We are beginning to implement contractual language, which requires our industry partners to adhere to NIST standards commensurate with Defense Federal Acquisition Regulation System (DFARS) rules. This measure will protect information systems handling of comprehensive DoD transactional information. We are also embedding a contractual requirement for participants to perform self-assessments against NIST standards and submit a plan of action to USTRANSCOM to address deviations from the standard and non-compliance. USTRANSCOM may conduct an on-site visit or request a third-party assessment to review progress toward meeting action plans.

The completion of an initial Mission Assurance Assessment of the Joint Deployment Distribution Enterprise (JDDE) also offered insight on where we need to improve our cyber defenses. With the knowledge gained from this study, we are completing a more comprehensive, OSD-directed assessment of selected strategic seaports. We incorporated cyber events in multiple major exercises and learned it is impractical to defend everywhere, all the time. Instead, resiliency is key, not only in our cyber-enabled systems, but also in the operations that depend on those cyber-enabled systems. As demonstrated by Maersk's June 2017 NotPetya incident, one cyber incident has the potential to impact the entire enterprise.

To address these challenges, we must iteratively improve risk-reduction measures to include identifying and hardening security risks for National Key Cyber Terrain, developing and implementing cybersecurity standards, sharing information across agencies, conducting routine vulnerability assessments, mitigating insider threats, and developing contingency plans for significant cyber incidents. We need to link DoD and DHS cyber authorities across critical defense networks and develop procedures to share information with our fourth component as we all operate among the same threats. Finally, cybersecurity standards must advance beyond the minimum requirements and facilitate a collective framework to defend against competitors and adversaries. Our challenge is everyone's challenge.

Evolving for Tomorrow

USTRANSCOM delivers on behalf of the Nation and has done so successfully for 30 years. However, we must avoid complacency. We face a challenging future marked by growing uncertainty, risk, and complex demands. We have to be ready for any possible set of circumstances. With that reality in mind, the Command is focused on evolving to respond to the Nation's needs today, while simultaneously preparing for the future. In doing so, we continue to

pursue opportunities in cyber and technology to modernize our systems and processes and ensure the enterprise remains ready and resilient across the spectrum of operations.

Transportation Management System (TMS)

The Joint Force's transportation requirements demand transparency, affordability, and asset visibility to preserve options in the current operating environment. Over the last three decades, USTRANSCOM developed technical solutions with the best available technology platforms at that time. As a result, the command now has a diverse set of programs that link movement requirements with available transportation assets across the enterprise. In 2015, USTRANSCOM identified 12 performance gaps in the current network structure that prevent the command from conducting integrated multi-modal operations. Most major manufacturers and distribution companies (e.g., Walmart and Amazon), use a Transportation Management System, a single platform for end-to-end shipment planning and execution, to increase return on investment. While the dollar may not be the bottom line for the DoD, a TMS promises to improve support to the warfighter and boost auditability.

In August 2017, the command initiated a proof-of-principle to determine the feasibility of implementing a TMS. This four-month proof of principle validated our assumptions on the capabilities and benefits of a TMS and confirmed its broad reaching value to the JDDE. TMS streamlines transportation and financial management processes, enhances enterprise-wide asset visibility and flexibility, and increases readiness. With plans for an enterprise-wide TMS, USTRANSCOM is forging ahead with implementation, beginning with a full-scale prototype. We are strengthening strategic partnerships with Defense Logistics Agency (DLA) and Pacific Command (PACOM), and inviting the Services, CCMDs, and other partners to a joint planning

event early this year. These engagements will build universal acceptance and allow the enterprise to leverage the operational power of a TMS.

Cloud Computing

This year, USTRANSCOM is in the process of rapidly transitioning all our digital applications to cloud-based technology. Leveraging best-of-breed commercial technology allows us to control costs, enhances Mission Assurance, and improves our agility and network resiliency. Furthermore, the cloud allows our program managers, developers, and software engineers to keep pace with industry, and track, review, and plan costs associated with IT projects, in real time. Economies of scale, standardization, and automation in cloud computing also promise to substantially reduce the cost of IT infrastructure. We anticipate completing this effort in the summer of 2018, to include secret level applications.

Pathfinding for the Department as its "Cloud Center of Excellence," the command is executing its migration, with about 25% of programs and applications already in the cloud. We are increasing security, access, and reliability while freeing resources and manpower to tackle our toughest cyber challenges. Most importantly, we are providing a production contract model and repeatable process for the entire Department to leverage. Establishing secure IT infrastructure for commercial industry must be a priority. USTRANSCOM is setting conditions for success for the rest of the DoD - we'll proudly continue to serve as the pathfinder for defense cloud-computing. Moving to the cloud not only improves security, it is also a key requirement in harnessing the power of data.

Building the "Data Lake"

Developments in the field of big data analytics suggest that transformative solutions to many of the most complex problems within the logistics enterprise are just over the horizon.

Access to large data-sets and the interrelationship between them, along with tools to translate data into knowledge, will enable the enterprise to rapidly convert knowledge into action. We must have the proper tools to actually derive meaningful insight from data and subsequently, convert knowledge into action. Currently, the transportation enterprise uses data to inform daily transactional functions but fails to fully leverage big data and advanced analytics to inform logistics forecasting and rapid decision making. Last year, we partnered with Defense Innovation Unit Experimental, Defense Digital Services, and the Strategic Capabilities Office to build a roadmap for constructing the enterprise's "data lake" and take advantage of the power of living data for logistics.

Leveraging Emerging Technologies

Transitioning our systems to the cloud and building the data lake are the foundational steps to realizing the potential in future technologies like machine learning, artificial intelligence, and autonomy. When distribution requirements surge and operator shortages strain the distribution system, demands will eventually overcome capabilities. To mitigate these challenges and meet dispersed distribution requirements, industry is innovating a future of low technology and high volume, in contrast to our current high technology and low volume model of more advanced and expensive defense assets. This future is based on machine learning and artificial intelligence platforms that eclipse the human advantage. We are embedded with the OSD Artificial Intelligence Working Group to realize this technology and ensure we are maintaining pace with industry and rival nations. Focusing on these technologies will also allow the enterprise to pursue a future in autonomous systems – trucks that drive themselves, ships that can navigate oceans without human inputs, and wide-body aircraft that can land on their own.

<u>Workforce Development</u>

Meeting the challenges of our time and realizing the full potential in the opportunities ahead, demands an innovative, agile, and diverse workforce. These challenges are only increasing in complexity, and recruiting, developing, and retaining talent is more important than ever. At USTRANSCOM, we strive to cultivate a force that is agile enough to operate across GCC boundaries and adaptable enough to thrive in a complex and dynamic operating environment. To achieve this end, we undertook several initiatives within the past year to enhance our developmental opportunities and ensure we retain high-performing individuals. In an effort to broaden our workforce and expand partnerships, we instituted a civilian exchange with the Defense Logistics Agency (DLA) and National Geospatial-Intelligence Agency (NGA) through our civilian experiential development program. Through initiatives like this one, we intend to diversify thought and reinforce an already strong, collaborative relationship with our strategic partners. We are also developing robust strategic workforce planning initiatives that will help the Command identify and access the right talent needed to continue to meet national security mission imperatives. Among these workforce initiatives are adding data scientists, data analysts, data managers, and cyber professionals to the workforce, all critical to mission assurance in the future.

Our Commitment to Meeting Tomorrow's Challenges

For 30 years, the Nation has turned to USTRANSCOM's strategic power projection capabilities to respond to global threats and disaster. We do not know what tomorrow will hold, but the next year promises to be as busy and challenging as the last. The actions we take today to improve readiness, modernize the force, and assure our future capabilities have to be sufficient to ensure we remain the preeminent military power. USTRANSCOM will not get there alone. Together, We Deliver.