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ARMY MODERNIZATION

UNITED STATES SENATE COMMITTEE ON ARMED SERVICES

SUBCOMMITTEE ON AIRLAND

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RECORD VERSION

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BEFORE THE

SUBCOMMITTEE ON AIRLAND
COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ON

ARMY MODERNIZATION IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2017 AND THE FUTURE YEARS DEFENSE PROGRAM

SECOND SESSION, 114TH CONGRESS
APRIL 5, 2016

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COMMITTEE ON ARMED SERVICES

Introduction

Chairman Cotton, Ranking Member Manchin, distinguished Members of the Subcommittee on Airland, thank you for the opportunity to appear before you today. On behalf of our Acting Secretary, the Honorable Patrick Murphy, and our Chief of Staff, General Mark Milley, we look forward to discussing the Army's Fiscal Year 2017 (FY17) budget request as it pertains to Army strategy, equipment modernization, and readiness.

We present our testimony today with a sense of urgency. With today's fiscal constraints, we risk becoming not only a smaller, but also a less-capable force. Budget unpredictability and reductions over the last several years has hampered modernization and threatens our ability to overmatch future enemies in ground combat. Investments today are critical because it is more cost effective to maintain and improve existing capabilities than regenerate lost capabilities rapidly in times of crisis. As the National Commission on the Future of the Army observed, reductions in Army modernization are elevating risk to Joint Force capability and national security. Our testimony aims to provide Congress and the American public with a greater understanding of the global security environment, the growing capabilities of our enemies and adversaries, and the capabilities and capacity the Army requires to protect our citizens and secure our vital national interests.

The Need for Ready, Modernized Land Forces

Since World War II, the prosperity and security of the United States have depended, in large measure, on the synergistic effects of capable land, air, and maritime forces. U.S. defense strategy requires ready Army forces capable of operating as part of joint teams in sufficient scale and for ample duration to prevent conflict, shape security environments, and create multiple options for responding to and resolving crises. As the nation's principal land force, the Army organizes, trains, and equips forces for prompt and sustained combat. Army forces are necessary to defeat enemy organizations, control terrain, secure populations, consolidate gains, and preserve joint force freedom of movement and action. Forward positioned and regionally engaged Army forces build partner capability, assure allies, and deter adversaries. To protect the homeland, foster security abroad, and win wars Army forces must have the capability (ability to achieve a desired effect under specified standards and conditions) and capacity (capability with sufficient scale and endurance) to accomplish assigned missions as part of the Joint Force while confronting increasingly dangerous threats.

We live in an ever-changing, increasingly dangerous world. Since decisions about the Army's size and reductions in Research, Development, and Acquisition (RDA) investments were made in 2014, the Islamic State of Iraq and the Levant (ISIL) captured large parts of Iraq and Syria and expanded into Libya and other locations; the Syrian Civil War escalated causing a refugee crisis in the Middle East and Europe; Russia occupied Crimea, invaded Ukraine, and intervened alongside the Iranian Revolutionary Guard Corps to maintain the Assad regime in Syria; North Korea became increasingly

bellicose and tested nuclear weapons and ballistic missiles; China continues its unprecedented construction at reclaimed features in the South China Sea; and the Taliban continued to intensify offensive operations in Afghanistan. ISIL continued to conduct attacks from Tunisia, to Egypt, Lebanon, Iraq, Turkey, France and Belgium. To respond to these threats Army forces have maintained a Brigade Combat Team (BCT) in Kuwait, returned advisors and Special Operations Forces to Iraq, initiated BCT rotations in Europe, increased exercises with partners and Allies in the Pacific, and maintained force levels in Afghanistan. Once Soldiers are committed to these critical missions, it is difficult to disengage them. Due to reductions in the size of the Army and increasing commitments overseas, the pool of ready Army forces prepared to deploy rapidly and transition quickly into Joint operations is significantly challenged even as threats to national and international security are increasing.

Emerging Challenges

Threats, enemies, adversaries and geo-strategic competitors are becoming increasingly capable and elusive, which pose challenges to U.S. national security interests. Russia, North Korea, Iran and Violent Extremist Organizations (VEOs), such as ISIL, pose potential threats to U.S. national security interests. At the same time, the modernization of China's military forces poses a different type of challenge. Combined, those challenges represent a broad range of operations for which the Army must be prepared, from state to non-state to hybrid conflict. Analysis of threat capabilities reveals that the Army must modernize the force to be prepared to fight and win against increasingly capable adversaries.

In terms of state-based challenges, Russia's purported annexation of Crimea and invasion of Ukraine demonstrated a sophisticated combination of diplomatic, informational, military, and economic means to achieve objectives below a threshold that the Russian leadership believe would elicit a concerted NATO response. In addition, through an intensive modernization effort, Moscow is developing a significant capability in several specific military areas. In Ukraine for example, the combination of Unmanned Aerial Systems (UAS) and Offensive Cyber and advanced Electronic Warfare (EW) capabilities depict a high degree of technological sophistication that is a direct result of their modernization efforts. Robust anti-access and area denial capabilities, which include advanced air defenses and mobile gun-missile systems that range out to 400 kilometers, allow Russia to challenge air superiority from the ground. In addition, Russia possesses a variety of rocket, missile, and cannon artillery systems that outrange and are more lethal than US Army artillery systems and munitions. Advanced close combat systems including new combat vehicles, active protective systems, and improved Anti-tank Guided Missiles (ATGMs) highlight improvements in the mobility, protection, and lethality of Russian heavy forces. It is clear that while our Army was engaged in Afghanistan and Iraq Russia studied US capabilities and vulnerabilities and embarked on an ambitious and largely successful modernization effort.

China is modernizing its Army and is developing capabilities to project power within the air, maritime, space, and cyberspace domains. China's actions in the South China Sea

lead to questions about its intention and commitment to uphold a rules based international system. Its efforts in space reveal China's determination to achieve space parity and possible superiority. China maintains its own constellation of satellites and recently demonstrated anti-satellite capabilities by shooting down one of its low earth orbit systems. China is also developing offensive cyber capabilities and an ability to jam the electromagnetic spectrum through EW capabilities that impacts U.S. communications and Precision, Navigation, and Timing (PNT), which severely limits what was once a significant differential advantage for U.S. forces. Additionally, China is actively fielding a fully mechanized force and has instituted realistic training to increase the readiness of its combat brigade formations. Current trends in Chinese weapons production will enable the Chinese to conduct a range of military operations well beyond its borders.

Despite increasingly constrained financial resources, the Democratic People's Republic of Korea (DPRK) continues to prioritize expansion of its nuclear and ballistic missile programs. The DPRK also maintains an aging but large and capable conventional force that has the ability to mass long-range fires on targets throughout the region, including Seoul. In addition, the DPRK military possesses cyber and chemical-biological warfare capabilities. As the DPRK continues to threaten attacks on the United States and our allies, and as the DPRK leadership faces mounting economic and political pressures, the United States must maintain its deterrent force on the peninsula and be prepared to deploy substantial ground, air, and maritime forces as part of a coalition alongside Republic of Korea (South Korea) forces in defense of South Korea and the region.

Iran employs proxies, exploits disenfranchised populations, and deploys covert operators to exacerbate sectarian conflicts, counter US influence, and undermine US interests in the greater Middle East. Iran's involvement in the Syrian, Iraqi, and Yemeni conflicts deepened over the past year. With the signing of the Russian-Iranian Military Cooperation Agreement last year, and the lifting of economic sanctions, it is likely that Iran will accelerate military modernization. Iran's current modernization efforts include purchases of long-range surface to air missiles from Russia, an extensive fleet of unmanned aerial vehicles, cyber capabilities, ballistic missiles, and anti-tank guided missiles.

Threats to national security are also increasing from non-state actors. The emergence of ISIL is one example of how non-state actors capitalize on opportunities created by communal conflict and weak governance. ISIL's military organization; ideological base; use of mass murder and other forms of brutality; and its ability to mobilize people, money, and weapons have enabled it to seize territory and establish control of populations and resources. ISIL has demonstrated particular skill in employing social media to prosecute a propaganda campaign that complements terrorist and conventional military operations. ISIL's success, combined with the political and economic weaknesses of many Middle Eastern states has caused violent Islamist extremism to metastasize across much of the Middle East and Africa which has led to the greatest mass migration since the end of World War II. ISIL inspired, planned, and resourced attacks from Iraq to Lebanon, Turkey, Paris, Brussels, and even the

homeland indicate that terrorist organizations that control territory, populations, and resources cannot be contained.

As demonstrated in these examples, future armed conflict will be complex, in part, because state, non-state, and hybrid threats are increasingly capable and are narrowing US competitive advantages not only on land, but also in the air, maritime, space, and cyberspace domains. Because these threats may originate in urban areas or remote safe havens, long-range strikes will prove insufficient to defeat them. The complexity of future armed conflict requires an Army capable of conducting missions at home and in foreign lands. To maintain overmatch against elusive and increasingly capable enemies, our Army must maintain readiness for today and invest in modernization to ensure readiness for tomorrow.

Resourcing Army Modernization

Due to resource constraints, today's Army prioritizes readiness while continuing to assume risk to modernization. We simply cannot modernize the entire force with the most modern equipment. Since FY12 the Research, Development and Acquisition (RDA) accounts have declined by over 30 percent. Given the restrictions on modernization funding, technological plateaus and the uncertainty of world events, the Army must be selective in resourcing its programs. In FY17, the President's Budget request totals $22.6 billion for the Army's RDA program, which includes $15.1 billion for Procurement and $7.5 billion for Research, Development, Test and Evaluation (RDT&E). We are 'adapting today and investing tomorrow'. We are focused on suitable

new uses or purposes for equipment in the near term; making modest investments and delaying new capabilities in the mid-term and protecting Science and Technology for the future. Specifically, our RDA resources are focused on:

1. **Science and Technology (S&T)**. Protected S&T funding ensures the next generation of breakthrough technologies can be rapidly applied to existing or new equipment designs. We are implementing a strategic approach to modernization that includes an awareness of existing and potential gaps; an understanding of emerging threats; knowledge of state-of-the-art commercial, academic, and Government research; and an understanding of competing needs for limited resources.

2. **New Systems**. The Army is making modest developmental investments based on critical operational requirements and capability shortfalls. Fiscal realities have led to the delay or discontinuance of new systems. Key investments that remain in the next generation of ground vehicle capabilities include the Armored Multi-Purpose Vehicle and the Joint Light Tactical Vehicle, a critical program for the Army and the U.S. Marine Corps. Also in this area, the Fixed-Wing Utility Aircraft (FUA), a replacement for the C-12 and C-26 platforms, is projected to be selected and begin fielding in FY18.

3. **Modification/Modernization**. The Army must incrementally modify or modernize existing systems in order to increase capabilities and extend service life. In

addition, the continuous improvement of existing systems helps to sustain the industrial base. In this area, we are focused on improving the Abrams, Bradley, and Stryker Families of Vehicles, as well as Paladin, Improved Turbine Engine Program, and the Guided Multiple Launch Rocket System Unitary. We are also improving the Apache, Black Hawk, and Chinook helicopter fleets, as well as our Unmanned Aircraft Systems.

4. **Reset and Sustain**. Returning Army equipment to the required level of combat capability remains central to both regenerating and maintaining equipment near-term readiness for contingencies.

5. **Divest**. The Army divestment process seeks to identify equipment and systems that are excess across the Total Army in order to reduce and eliminate associated sustainment costs. For example, we are divesting the aging M113 armored personnel carriers. Additionally, the Army's Mine Resistant Ambush Protected (MRAP) vehicles divestiture will eliminate a large portion of the fleet through Foreign Military Sales, distribution to other agencies, and demilitarization of older, battle-worn, excess vehicles. The Army also continues to divest its aging TH-67 training helicopters, as well as the OH-58A/C Kiowa, OH-58D Kiowa Warrior, and UH-60A Black Hawk fleets.

FY17 Budget Priorities

Over the last 15 years of combat operations, the U.S. Army had to focus on winning against specific threats in Afghanistan and Iraq that limited the Army's ability to modernize for future fights. There are currently no ground combat vehicle developmental programs which means, at current funding levels, the Bradley and Abrams will be in the Army inventory for 50-70 years. Meanwhile, threats, enemies and adversaries have been modernizing rapidly. Due to increasing enemy capability and reduction in Army resources available for modernization, risk is increasing to Soldiers and missions.

The President's budget request for FY17 prioritizes the following five capability areas:

Aviation. The Army continues to invest, at a slower pace, in Aviation to sustain fleet modernization and close key capability gaps in survivability and lethality. Specific investments in this portfolio include the following:

- The Army will pursue a Multi-Year Contract (MYC) in FY17 for the *AH-64 Apache* in order to achieve cost avoidance and efficiencies, while completing the AH-64E Apache Remanufacture Program. This program is designed to renew the current Apache fleet by incorporating current technologies and a new airframe to extend the aircraft's useful life and make it one of the most technologically advanced weapon systems on the battlefield. With regard to Manned/Unmanned Teaming (MUMT), the AH-64E Apache program has successfully developed the capability to view video

from all U.S. Army Unmanned Aircraft Systems (UAS) and link with and fully control the Gray Eagle UAS. In FY17, development continues on the next step of control with MUMT-X, which will give the AH-64E Apache the capability to control all other UASs in the Army fleet.

- The *UH-60 Black Hawk* continues to be the Army's workhorse and, at 2,135 total airframes, is our largest fleet of rotary wing aircraft. Fleet modernization efforts focus on the continued procurement of the UH-60M aircraft, recapitalization of UH-60A into UH-60L aircraft, the development of the UH-60V aircraft with a digital cockpit, and divestment of legacy aircraft. In FY17, the Army will enter into the ninth MYC to be awarded through FY21.

- The *Improved Turbine Engine Program* is designed to provide significant horsepower and fuel savings to enable current AH-64 Apache and UH-60 Black Hawk fleets to meet worldwide operational requirements for high altitude and hot conditions. The program continues in FY17 with two vendors undergoing Preliminary Design Review, which will lead to a down select in FY18 to a single vendor for engine development.

- The *CH-47 Chinook*, the Army's only heavy lift helicopter, is projected to remain in service through 2060, making it the Army's first, and only, aircraft in service for more than a century. The planned H-47 Block II upgrade to the H-47F/G will restore operational payload capability, efficiently incorporate engineering changes, and increase commonality between SOCOM and the conventional Army.

- The Army has an *Unmanned Aircraft Systems* (UAS) fleet comprised of small (Raven and Puma), medium (Shadow), and large (Gray Eagle) components. All systems are existing programs of record and are under active acquisition programs to meet fleet size objectives over the next five years. Gray Eagle is a dedicated, assured, multi-mission UAS being fielded to all 10 Army divisions to support combat operations, as well as the National Training Center. Additionally, the Improved Gray Eagle, which achieves significant increases in payload, range, and station time through fuselage and engine enhancements, is fielded to Special Operations Forces and Intelligence organizations in support of global Department of Defense Intelligence, Surveillance, and Reconnaissance (ISR) requirements. Shadow is a dedicated Reconnaissance, Surveillance, and Target Acquisition UAS fielded to Army and Army National Guard BCTs, Special Forces Groups, the Ranger Regiment, and performs Manned-Unmanned Teaming with Apache in Combat Aviation Brigades to meet the Armed Aerial Scout requirements in lieu of the divested OH-58D Kiowa Warrior. Shadow Platoons are currently undergoing a major block upgrade that provides enhanced encryption, increased endurance, improved optics, and a high bandwidth, digital data link capable of support secure transmission of multiple payloads.

- FY17 funds for the Army's fixed wing fleet include procurement of the *FUA*, which will begin replacing the current C-12 platforms and later the C-26 platforms.

- The *Joint Air-to-Ground Missile* (JAGM) is an Army-led Acquisition Category 1D program with Joint interest from the U.S. Navy and U.S. Marine Corps. JAGM is the next generation of aviation launched missiles to replace the laser Hellfire II and the Longbow radar missiles. FY17 funds the first JAGM Low Rate Initial Production lot.

Network. The Army must maintain a robust Network that is protected against cyber-attacks to execute uninterrupted mission command. Key investments supporting the Network include the following:

- *Warfighter Information Network-Tactical* (WIN-T) provides "networking-on-the-move" capability. WIN-T also provides Soldiers and leaders a mobile infrastructure that employs military and commercial satellite connectivity, and high capacity line-of-sight (terrestrial) connectivity. It extends the tactical wide area network throughout division, brigade, battalion, and company levels in the maneuver force. The WIN-T Increment 2 program is in Full Rate Production and fielding following a successful operational test and performing well in operations in theater.

- *Assured Position, Navigation and Timing* (A-PNT) is a critical enabler for Army warfighting functions and virtually all Army weapon systems. Program Manager Positioning, Navigation and Timing (PM PNT) and Army S&T are developing technologies to provide Dismounted and Mounted Soldiers the capability to attain trusted PNT information while operating in conditions that impede or deny access to the Global Positioning System (GPS). These technologies include non-GPS

augmentation for distributed Mounted and Dismounted PNT capabilities, pseudolite transceivers (an alternative source of GPS-like signals), and anti-jam capabilities. Both the Mounted and Dismounted efforts are structured to provide a hub capability that distributes an A-PNT solution to vehicles and Soldier systems. In FY17, Army S&T will transition A-PNT technologies for Mounted and Dismounted application to PM PNT with the Program of Record Milestone B scheduled in mid-FY18.

- *Communications Security* supports the implementation of the National Security Agency (NSA) developed Communications Security (COMSEC) technologies into the Army by providing COMSEC systems capabilities through development and integration of encryption, trusted software, and/or standard operating procedures into specified systems in support of securing Army and Department of Defense Networks and capabilities.

- *Offensive Cyber Operations (OCO) and Defensive Cyber Operations (DCO)* allow the Army to protect its networks and project force in cyberspace. The Army has positioned itself with U.S. Army Cyber Command (ARCYBER) and the Cyber Center of Excellence to provide capabilities in both mission areas and will continue to do so. In the area of DCO, the Army will continue to invest in infrastructure and tools to set conditions for increased defensive capabilities. We are in the initial stages for fielding capability and FY17 will be critical in further development.

- *Cyber Situational Awareness* is integral to OCO, DCO, and Department of Defense Information Network operations that support commanders in the conduct of unified land operations. These capabilities range from system status to mission and threat awareness to targeting and engagement data to influence cyber and electromagnetic effects. We are currently working with the Cyber Center of Excellence and ARCYBER to address these requirements.

Integrated Air Missile Defense (IAMD). The Army must be able to defeat a large portfolio of threats ranging from micro Unmanned Aircraft Vehicles and mortars, to cruise missiles and sophisticated short and medium range ballistic missiles. The Army will support this priority by investing in an Integrated Air and Missile Defense Battle Command System, an Indirect Fire Protection Capability, and modernization of the Patriot system.

Within this demanding mission area, the number one Air and Missile Defense (AMD) modernization priority remains the *IAMD Battle Command System* (IBCS). IBCS will replace elements of seven existing mission command programs, and allow transformation to a network-centric system-of-systems capability that integrates AMD sensors and weapons. A second critical priority is to significantly improve capabilities in Countering Unmanned Aircraft Systems (CUAS) and Cruise Missile Defense (CMD), while continuing to pace the Ballistic Missile Defense (BMD) threat and maintaining capability to Counter Rockets, Artillery and Mortars (C-RAM). The portfolio will accomplish this by leveraging the *Indirect Fire Protection Capability Increment II*

Program and a Multi-Mission Launcher (MML) to address select CUAS, CMD, and C-RAM threats and replace Avenger/Stinger across the force. The Army is continuing investments to improve Patriot radar capabilities and field the *PAC-3 Missile Segment Enhancement* (MSE).

Combat Vehicles. The Army is pursuing a Combat Vehicle Modernization Strategy to ensure Army BCTs possess the lethality, mobility, and protection to achieve overmatch during joint expeditionary maneuver and joint combined arms operations:

- *Ground Mobility Vehicle* (GMV) will be procured as a Commercial/Government Off-the-Shelf (C/GOTS) solution to address a significant mobility gap in the Infantry Brigade Combat Teams (IBCT). The Army's current analysis of alternatives for GMV is expected to be complete in mid-FY16 and inform the acquisition of a commercial, non-developmental solution beginning in FY17.

- *Stryker Lethality Upgrades* address capability gaps resulting from more than 12 years of combat through an incremental Engineering Change Proposal (ECP) strategy currently focused on increasing mobility, electrical power, and the need to accept future network upgrades. Efforts also include upgrades to increase the lethality of the Stryker Family of Vehicles and Double V-Hull upgrades to increase vehicle protection. The Army plans to increase lethality by having half of the Infantry Carrier Vehicles equipped with a 30 mm cannon and the other half equipped with a Javelin missile on the existing Remote Weapons Station in each

brigade. The Army plans to increase protection by upgrading Stryker vehicles to a Double-V Hull (DVH) architecture for four of the nine BCTs. DVH production utilizes an exchange process, removing select components and mission equipment packages from flat bottom Strykers and installing them into a new DVH.

- *Mobile Protected Firepower* will provide protected, long-range, direct fire capabilities to the IBCT to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. The Army plans to conduct the Mobile Protected Firepower Analysis of Alternative in FY17 to assess the operational effectiveness, suitability and life-cycle cost of both developmental and non-development materiel solutions that satisfy requirements contained within the Initial Capabilities Document.

- *Armored Multi-Purpose Vehicle* will replace the legacy M113s at the brigade level and below to support the Armored BCT and will consist of five mission roles: General Purpose, Mortar Carrier, Mission Command, Medical Evacuation, and Medical Treatment variants. The Engineering and Manufacturing Development contract was awarded in December 2014, and we anticipate the first prototype delivery vehicle in December 2016.

Emerging Threats. As mentioned earlier, the Army invests in S&T to focus on critical capability gaps and allow our Soldiers to operate in contested environments and win

decisively against any potential adversary in the mid to far timeframe. These S&T investments will deliver capabilities to address critical gaps in combat vehicles, Future Vertical Lift (FVL), expeditionary mission command, cross-domain fires, cyber electromagnetic activities, robotics and autonomous systems, advanced protection and Soldier and team performance and overmatch. For example, the Modular Active Protection System and advanced protection systems program will increase vehicle and aircraft survivability and protection against current and emerging advanced threats; Electronic Warfare efforts will focus on designing countermeasures to address threats against Army rotorcraft, ground mounted platforms and dismounted Soldiers; and the Combat Vehicle Prototyping program will demonstrate advanced capabilities for the combat vehicle fleet, reducing technical risk for future programs, including the Future Fighting Vehicle. Other areas to help ensure that our Soldiers are protected against emerging threats include Degraded Visual Environment mitigation to inform leadership on improvements to platform survivability; Red Teaming and Vulnerability Analysis to know our weaknesses and fix them; a directed energy component for Counter Unmanned Aerial Systems (CUAS), Counter Rocket Artillery and Mortar (CRAM), and Cruise Missile Defense (CMD); cyber situational awareness and offensive and defensive cyber operations to collect, develop understanding and defeat threat advancement in cyber electromagnetic capabilities; and sensor protection to ensure more consistent situational awareness. Additionally, the JMR-TD will fly demonstration aircraft to prove out FVL technology and inform requirements development. FVL will conduct an Analysis of Alternatives and begin development of the initial variant. A Materiel Development Decision for the first FVL variant will occur in FY17. Lastly, S&T

investments in robotics and autonomous systems (RAS) improve Army formation capabilities in situational understanding, mobility, protection, lethality, and sustainment in ways that cannot be achieved elsewhere.

Other Major Programs for FY17. The Squad is the foundation of the Decisive Force. Closing gaps in capabilities will ensure the Army's foundational tactical unit can close with and destroy the enemy under all battle conditions and accomplish missions in complex environments. The integration of Squad-related initiatives across numerous capability portfolios is essential to success. The Army is constantly working to reduce the weight and improve the performance of the Soldier's *individual equipment*. Currently, we are researching improved ways to help redistribute the weight carried by Soldiers so they can carry their load with less stress on their backs or knees. Plans include the development of new rucksacks and other equipment so Soldiers can more comfortably carry their supplies, ammunition, and equipment. Research is also taking place on a new load-bearing system. Every effort undergoes extensive user evaluations by Soldiers throughout the development process. The Army is also working to reduce the weight of the clothing and equipment Soldiers carry by developing lighter body armor, helmets, and other equipment while addressing a wide-range of threats to our Soldiers, including ballistics, blast overpressure, concealment, fragmentation, and heat.

In addition to the above efforts, the Army's Soldier Protection System (SPS) is an integrated personal protection system that integrates head, torso, and extremity

protection. It maintains current standards of personal protection but with lighter weight than current systems. It is also scalable, allowing Soldiers to increase the level of protection or reduce weight depending upon mission requirements. SPS consists of five major subcomponents: (1) the Integrated Head Protection System is a new helmet concept which allows the Soldier to add additional protection, such as an additional layer of armor or facial protection, depending upon mission requirements; (2) Transitional Combat Eye Protection is eyewear that electronically either automatically or manually adjusts for darkness or light, which is critical when a Soldier exits a sunlit street into a darkened structure; (3) Torso Protection features a new combat vest with pelvic protection that provides modular levels of protection that can be scaled up or down depending on mission requirements; (4) Vital Torso Protection provides lighter weight hard armor plates; and (5) the Integrated Soldier Sensor System will provide sensor technology to record forces that affect the Soldier, as well as monitor the Soldier's health status. Other important initiatives include the Lightweight Advanced Combat Helmet, which provides the same levels of protection as the Advanced Combat Helmet but with less weight and the Enhanced Combat Helmet, which provides significantly better head protection without additional weight.

In the area of *Aircraft Survivability Equipment*, the FY17 budget request will accelerate the Common Infrared Countermeasure system and will begin fielding in the near-term. This will be coupled with the Advanced Threat Detection System (ATDS) to improve infrared threat detection. Essential to protection of aircraft against emerging threats, the Army will pursue S&T efforts to develop follow on systems that are able to defeat a

threat system irrespective of its targeting and guidance systems, propulsion means, or warhead type. In addition, FY17 funds the development of an ATDS (Detect) to replace the Common Missile Warning System.

In the area of Cross Domain Fires the Army is ensuring that area and precision fires capabilities support maneuver BCT core mission competencies. The Army is continuing research into improving organic BCT Near-Precision and Precision fires, cluster munitions replacement, and long-range fire enhancements. In the near-term, the Army will continue radar modernization with fielding the *Q-50 and Q-53 Radar Systems*, replacement of Paladin M109A6 with *Paladin Integrated Management* (M109A7), and continued production of *Guided Multiple Launch Rocket System - Alternate Warhead* missiles.

The Army is committed to providing Soldiers with the best intelligence tools and technology available. The intelligence warfighting function's priority is the Army's Terrestrial Layer, followed by the Foundation Layer and the modernization of the Aerial Intelligence, Surveillance and Reconnaissance (ISR) platforms and sensors within the Aerial Layer. The first priority is the *Prophet Ground Signals Intelligence* (SIGINT) capability. Prophet must be constantly modernized to maintain pace with changing global military and commercial technologies available to the threat. Prophet will also bridge the operational gap until replaced by the future Next-Generation Multi-Intelligence Ground Collection System. The second priority within the Foundation Layer is a capability that enables processing, exploitation and dissemination of information to

maintain highly accurate situation awareness, such as the *Distributed Common Ground System-Army* (DCGS-A). As we continue to refine and improve the current version of DCGS-A, we are committed to a full and open competition in FY16 to develop, test, and produce the next version of this intelligence software system. FY17 funding will provide for the fielding of enhanced Increment 1, Release 2 capabilities to the Force, which improves the tools currently used by Soldiers to analyze, process, and visualize the information on the battlefield, and support Increment 2 development and testing. DCGS-A Increment 2 will provide a modernized data management architecture that complies with the Common Operating Environment, the Intelligence Community Information Technology Enterprise, and the Joint Information Environment; the integration of emerging sensor and automation technology; and enhanced ease of use and analytic capabilities. Funding also provides for the procurement of DCGS-A Tactical Intelligence Ground Stations to equip activating Expeditionary Military Intelligence battalions in all components.

The *Joint Light Tactical Vehicle* (JLTV), a Joint program with the U.S. Marine Corps, is the centerpiece of the Army's Tactical Wheeled Vehicle modernization strategy and a key enabler of Joint Combined Arms operations. JLTV provides the necessary leap in protection, performance, and payload – the Iron Triangle – to fill the capability gap remaining between the High Mobility Multipurpose Wheeled Vehicle and the Mine Resistant Ambush Protected Family of Vehicles. The JLTV is in Low-Rate Initial Production. The JLTV program will inform requirements for the potential development of a Lightweight Reconnaissance Vehicle (LRV).

The Army and the Department are working to implement the FY16 National Defense Authorization Act (NDAA) acquisition reform provisions to improve the acquisition process by strengthening the Army Chief of Staff's voice in the acquisition process as its principal customer. There is still more to be done within the Army to streamline the process. The fundamental principle is that authority must accompany responsibility. To hold the Chief of Staff accountable, he must have the authority to fix the Army's process. We will continue to explore steps to improve the Army's process.

The Army will ensure that system requirements are affordable and do not add excess technical risk to our acquisition programs. We have instituted processes known as *Knowledge Points* to identify necessary requirements trade-offs at key decision points. This process is mandatory across all major programs and is a critical factor in achieving a more effective, more affordable, and more responsive acquisition system. Knowledge Points enable the Army Chief of Staff to formally review system requirements throughout the development phase. In addition, the Army has instituted *affordability caps* on new programs to make sure that we can sustainably afford the development and production costs. For example, we made certain that we could afford AMPV at the same time we were producing the Paladin Improvement Management howitzer and JLTV.

Defense Industrial Base

Reductions in the Army's modernization account continue to present significant challenges for the Defense Industrial Base, especially for companies that do not have commercial sales to leverage and for small companies that must diversify quickly. In developing our equipment modernization strategy, we carefully assessed risks across all portfolios to ensure balanced development of new capabilities, incremental upgrades to existing systems, and protection of ongoing production to sustain the Defense Industrial Base.

The Army remains concerned about the preservation of key skills and capabilities in the manufacturing base for both our original equipment manufacturers and their key suppliers. Teaming and collaboration with our industrial base partners early in the process helps to reduce risk. Where applicable, the Army supports the efforts to develop Foreign Military Sales (FMS) and Direct Commercial Sales (DCS) that can also help to sustain the Defense Industrial Base.

The Army's approach to risk mitigation focuses on continuous assessment of industrial base risks across all portfolios. Fragility and Criticality (FaC) assessments are a critical part of the risk mitigation process and identify the fragile and critical portions of sectors within the Defense Industrial Base to facilitate risk-mitigation investment decisions. The FaC information provides Army program offices with the ability to accurately gauge how potential reductions in funding could affect suppliers that provide the capabilities, products, skills, and services needed to maintain readiness.

The Army recently completed studies that independently assess the health and risk of the Munition, Combat Vehicle, and Tactical Wheeled Vehicle industrial base sectors. In the Combat Vehicle portfolio, production of the M109A7 Self-Propelled Howitzer System, the Armored Multi-Purpose Vehicle, ongoing FMS, as well as incremental upgrades to Abrams, Bradley, and Stryker ensure continuing workload to sustain critical skills. In the Army's Aviation portfolio, multi-year contracts for the Black Hawk, Chinook, and potentially Apache provide stability and predictability to the industrial base while achieving significant cost savings for the Army and the American taxpayer.

The Army continually assesses the health of the organic industrial base (OIB), including our depots, arsenals, ammunition plants, munitions centers, and Government Owned Contractor Operated (GOCO) manufacturing facilities. The Army maintains critical skills sets in our OIB by identifying workload to preserve capabilities, exploring FMS opportunities, and encouraging our OIB facilities to partner with commercial firms and other Department of Defense organizations, such as the Defense Logistics Agency, to meet future requirements.

The FY17 budget request fully funds the Army's critical equipment readiness requirements and supports 13M Direct Labor Hours (DLH) of work within the depots. The arsenals also anticipate executing 1.4M DLH in FY17 to sustain their skill sets. This workload will adequately preserve the depot and arsenal critical skill sets, with some risk for those systems that have either been through reset or RECAP with

Congressional support. The Army is reassessing the arsenal's critical manufacturing capabilities with the Office of the Secretary of Defense and the other Services to ensure proper utilization of the arsenals to meet joint readiness requirements. Minimum workload levels to sustain these critical manufacturing capabilities will inform staffing levels and plant capacity to effectively sustain equipment readiness requirements. We will continue to modernize Army OIB infrastructure to support readiness.

Capacity Also Matters

The modernization priorities described above are critical to maintain overmatch against increasingly capable enemies. However, modernization alone is not enough. The Army requires *ready* forces that not only possess modern capabilities, but also the *capacity* to translate military objectives into enduring political outcomes. Army capacity is critical to deter enemies; reassure allies; surge forces to contingencies; control territory; secure populations overseas and in the homeland; and regenerate combat power. There is mounting risk associated with an Army that could prove too small to execute the strategy outlined in the National Military Strategy.

Current demand exceeds the Army's ability to supply units on a rotational basis. Today, the Army is globally engaged with approximately 190,000 Soldiers supporting Combatant Commanders in 140 countries. These Soldiers conduct combat operations, deter aggression, and assure our Allies and partners. In Afghanistan, the Army continues to engage the enemy as we work with Allies and partners to train, advise, and assist Afghan National Security Forces. In Iraq, we build partner capacity to fight the

Islamic State of Iraq and the Levant. Throughout Africa and the Americas, we partner to prevent conflict and shape the security environment. In the Pacific, more than 75,000 Soldiers remain committed, including 20,000 who stand ready in the Republic of Korea. In Europe and Asia, Army forces reassure Allies and deter aggression.

An Active Army which currently stands at 482,000 is drawing down from a wartime high of 570,000 (1,133,000 Total Force) to 450,000 personnel (980,000 Total Force) and reducing from 45 to 31 BCTs (59 Total Force). If sequestration-level cuts are imposed in FY18 and beyond, all components of the Army would be reduced further, with active duty end strength decreasing to 420,000, the Army National Guard drawing down to 315,000, and the Army Reserves reducing to 185,000. Those reductions would create unacceptable risk to the nation. Insufficient capacity in ready land forces limits options for the President, Secretary of Defense, and combatant commanders to respond to and resolve crises. Moreover, once cut it is difficult to regenerate Army forces rapidly. Growing the Army is difficult, costly, takes time due to a lack of manpower, the sophisticated nature of weapons and equipment, the importance of training teams on collective and individual tasks, and the need for those teams to have experienced leaders.

Conclusion

U.S. defense strategy requires ready Army forces capable of operating as part of joint teams in sufficient scale and for ample duration to prevent conflict, shape security environments, and create multiple options for responding to and resolving crises. Our

risk to national security is increasing due to our adversaries improving their capabilities, increased global commitments, reductions in Army manpower, and reductions in resources for readiness and modernization. To mitigate risk, Army leaders prioritize investments to sustain readiness and close the most critical capability gaps. We recognize that, in our democracy, we get the Army that the American people are willing to pay for. It is our job to do the best we can with the resources that Congress and the American people provide us.

Mr. Chairman and distinguished Members of this Subcommittee, thank you for your steadfast support for our Soldiers, Department of the Army Civilians, and Army Families.