DEPARTMENT OF DEFENSE

NATIONAL GUARD AND RESERVE EQUIPMENT REPORT FOR FISCAL YEAR 2017

March 2016

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(NGRER FY 2017)

(In Accordance with Section 10541, Title 10, United States Code)

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READINESS

FOREWORD

The enclosed National Guard and Reserve Equipment Report is a culmination of this year's work by the Services and Office of the Secretary of Defense to report to the Congress on the Nation's Reserve Component (RC) equipment levels. Properly equipping the RC with compatible, interoperable, and modern equipment is vital to the success of our defense strategy in order to maintain the level of operational support that the Nation has come to expect over the past 15 years of conflict. The operationalization of our Reserve forces in conjunction with its role as a ready reserve has proven to be a valuable construct and effective national strategy.

An appropriately equipped RC is critical to the military's Total Force readiness. Our Reserve forces should be similar in capability and have compatibility across the force with regard to lethality, networking, and force protection. RC equipment levels are as robust as ever contributing to the high state of readiness enjoyed by the components. However, the recent congressionally formed National Commission on the Future of the Army reported "…no satisfactory long-term funding approach provides DoD and the Army the funds needed to build and maintain military readiness, invest in modernization, and ensure the health of the force." Future budgets should maintain funding levels that equip our Reserve forces with the most modern equipment and seek to avoid delays in critical modernization activities. Paramount to this effort is recognizing the current state of our Reserve forces through visibility of RC equipping. The Department is currently evaluating proposals to achieve the optimal balance between transparency and budgetary flexibility.

The Reserve Component has always had strong support from our Nation's elected representatives. This advocacy reflects the impact our RC has across the world on behalf of the United States, as well as the positive impact that our Service members have on their own communities on a daily basis. Guard and Reserve forces should be equipped and appropriately funded to meet the challenges of this new era while fulfilling their obligations to the Total Force.

Sincerely,

Daniel P.C. Feehan
Principal Deputy

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Chapter 1 Overview

I. Purpose

The purpose of this report is to provide Congress with an in-depth look at the equipping needs and concerns of the Nation's Reserve Components (RC). Mandated in section 10541 of Title 10, United States Code, the report is a statutory requirement that reflects Congressional interest in ensuring a well-equipped and robust RC capability within the Armed Forces. The National Guard and Reserve Equipment Report (NGRER) identifies major items of equipment in the RC inventories that are important to the Services, DOD, and Congress, and also outlines Reserve equipment shortfalls and acquisitions for the FY 2017 budget year and the two succeeding years. Data on equipment included in the report consist of high-value, mission-essential equipment requirements, critical equipment shortages, Service procurements, supplemental funding for the RC, and items procured with National Guard and Reserve Equipment Appropriation (NGREA) funding. The FY 2008 National Defense Authorization Act directed new equipment reporting requirements for the National Guard's capability to perform its Federal responsibilities in response to an emergency or major disaster. This guidance is highlighted in its entirety in Appendix A, and the National Guard Bureau responds to the requirements in Appendix B.

II. Strategic Context

As we continue to examine what the force of the future will be, we must understand that our Nation cannot meet current or future contingency demands without our Reserve forces. They are continually looked at as "first responders" to national needs and are fully integrated into contingency planning. Without question RC Service men and women have been called to serve in every major conflict in our Nation's history. Since WWII RC personnel have been activated to meet our Nation's conflicts. Desert Storm saw the call up of some 230,000 Reserve and National Guard personnel. Now more than 15 years into continuous conflict in Afghanistan and the Middle East, with the mobilization of another 920,000 RC personnel, the culture of using Reserves as an operational force has been inculcated into our societal and military psyche. Moving forward, we must ensure that the RC is equipped and funded to remain a key enabler in the force of the future.

III. Equipping the Reserves

The Active Component (AC) has historically looked to the RC for fiscal relief during periods of shrinking budgets. To ensure readiness and relevance as operational forces in support of combatant commands and civil authorities as directed, modernizing, maintaining, and sustaining equipment needs to remain a top tier priority for RC and AC leaders.

The Services employ an equipping mechanism termed "cascading" to equip their respective RCs. Cascading is the movement of older legacy items into Reserve units as new equipment is delivered to the AC. This traditional cost-effective paradigm was utilized extensively during the era of a "strategic reserve" when large mobilizations of Reserve forces were anticipated in support of full scale national military engagements.

In 1981 Congress created a separate equipment appropriation for the RCs, titled the National Guard and Reserve Equipment Appropriation (NGREA). NGREA was a response to past AC

budget priorities and was intended to supplement the Services' base procurement appropriations for the RC. However, the Services retain their Title 10 responsibility to fund and equip their respective Reserves and National Guard.

IV. Challenges

In the following chapters, the Services articulate that funding clearly is the constant constraint for maintaining a fully modernized and operational reserve force. The current fiscal environment has increased the need to reassess funding priorities in all Services. Prioritized and informed funding, however, must be synchronized with the availability of identified equipment, ensuring that fiscal and equipment resources align, preventing a timing or capability mismatch at the operational level.

Due to the impacts of the Budget Control Act of 2011, the Department is witnessing a decline in RC equipment procurement funding, in some cases falling back to pre-9-11 levels or even lower. Although NGREA has allowed the RCs to make great strides in filling critical requirements, it is limited, subject to significant Congressional restrictions, and unpredictable as it falls outside normal procurement appropriations.

Cascading is an incongruous equipping mechanism as it does not reflect the current operational environment, which has seen a historic reliance on Reserve and Guard units over the last decade. Cascading sends a signal to both our Service members and their representatives about the notion of the "Total Force." The cyclical nature of rotating forces into operational environments requires that RCs are as ready and capable as the cohort with which they are a part. Parity in network capability, lethality, protection, and mobility are imperatives to ensure an engaged force is not disjointed and can provide appropriate and equitable levels of overmatch demanded by potential near peer competitors. Failure or weakness in this regard induces risk to the force. As a practical matter, moving aging systems into RC creates a capability and interoperability gap between RC and AC units. Cascading prolongs impending service life extension programs and life cycle maintenance actions, and delays modernization programs, further impacting limited operation and maintenance budgets.

A recent trend that is occurring to both cascaded and existing RC equipment is labeling it as "modern" when it was previously considered outdated. This obfuscates the fundamental issue of equipment interoperability between the RC and AC and portrays RC modernization levels higher than defined. While the RC may have the right quantity of equipment to go to war, they may not have the right quality of equipment. Given this, using the term "modern" to describe a piece of equipment may well be misunderstood by Departmental and Congressional leaders. The implications that old but good enough can be reported as modernized may suppress the demand signal to keep the RC truly modern and compatible.

To mitigate a degradation of RC readiness and their ability to respond when called upon, any course of action should support the tenets of operational relevance and interoperability. Transparency in funding and equipping will ensure that the Services are accountable to support the RC as they retain the experiences from over a decade at war and as they respond to crises abroad and in support of civil authorities at home.

Services should continue to embrace operational lessons learned and the many emerging technologies to increase technical and tactical proficiency while reducing costs. Better Buying Power practices must be used to ensure best use of Service dollars in acquisition and eliminate unproductive processes. Joint Service acquisitions, where feasible, should be promoted (like the Joint Light Tactical Vehicle) to take advantage of economies of scale and promote effective competition. Increased use of and reliance on enterprise-wide networked simulation continues to allow for better integration and realism. The benefits to the organization, the individual warfighter, and to the environment are changing the ways we train and fight. Equipment sharing between the AC and RC should be explored on a more institutionalized basis. While it may not be feasible for all units due to mission or location, equipment sharing could be a sustainable model for garrison units.

The Department of Defense has conducted several internal and independent assessments of the Equipment Transparency Report (ETR) to evaluate both its value and effectiveness in providing the desired transparency as directed by the Deputy Secretary of Defense and DoD Instruction (DoDI) 1225.06 *Equipping the Reserve Forces* based upon the recommendations of the 2008 Commission on the National Guard and Reserves. These assessments found gaps in the current strategy, business model, culture, and data systems and identified the ETR as ineffective at providing the intended transparency and accountability. Ultimately, the ETR has produced unreliable information compiled at a substantial cost in staffing efforts. The Office of the Deputy Assistant Secretary of Defense for Readiness (Readiness Programming and Resources) is currently working with departmental stakeholders coordinating alternatives to the ETR that would provide transparency and accountability of the Reserve Component equipping process.

V. Scope of the Report

The four charts in this chapter present a broad overview of previous major items reported in the NGRER, major item shortages in terms of dollar amounts, and the recent tracking through the current budget year of procurement funding for the RC. These introductory charts are summary and historical in nature and do not indicate the comprehensive dollar requirement that would be needed to fully fund Reserve capabilities. Detail on potential costs, such as modernization of existing systems is contained, where appropriate, in the chapters of the respective individual RC.

RC inventories include thousands of different types of equipment. The FY 2017 NGRER highlights 916 major equipment types whose total dollar value comprises approximately 85 percent of the value of all RC equipment. This report presents the results of analysis of RC inventories based primarily on the dollar value of the equipment, which allows the aggregation, comparison, and summary of diverse types of equipment. The procurement costs are from the Services' official data and are either the latest procurement cost adjusted for inflation or the current replacement cost.

Chart 1-1 shows the number of types of equipment included in previous NGRERs to Congress. These numbers are provided for perspective and comparison with previous reports and do not represent the entire inventory of RC major items.

Chart 1-1. Items of Equipment Reported in Recent NGRERs

Reserve Component	FY 2012 NGRER	FY 2013 NGRER	FY 2014 NGRER	FY 2015 NGRER	FY 2016 NGRER	FY 2017 NGRER
ARNG	396	365	271	320	305	261
AR	208	215	230	231	238	322
USMCR	213	150	212	201	205	183
USNR	44	42	42	40	36	36
ANG	31	30	30	29	29	26
AFR	16	20	18	17	16	17
USCGR	19	53	74	75	69	71
Total	**927**	**875**	**877**	**913**	**898**	**916**

VI. Equipment Shortages

Chart 1-2 shows the dollar value of the current total major equipment requirements and inventories for each RC. The information this chart displays indicates the requirement for new procurement for the RC; however, it does not indicate capabilities, shortfalls, or compatibility mismatch with the AC due to modernization requirements. For example, it does not include substitute items of equipment in determining shortages of Army RC equipment.

In any fiscal environment, there are never enough resources to fund every requirement. The Department of Defense, through its Planning, Programming, Budgeting, and Execution (PPBE) process, has determined that overall risk to the Active and Reserve Components is acceptable and that the allocation of resources between the two components is balanced correctly.

The Army National Guard (ARNG) and Army Reserve (AR) equipment shortage costs depicted in Chart 1-2 show the cost based on requirements and on-hand inventories without recognition of authorized substitutes. Chart 1-2 indicates a $23.9B total shortage cost for the ARNG and $8.9B for the AR. The ARNG shortage reduces to $21.7B and the AR shortage reduces to $6.6B when authorized substitutions are included.

The Marine Corps Reserve (USMCR) reflects a 25.9 percent shortage of its major items; however, the USMCR is equipped to a home station training allowance only. More information on the Marine Corps equipping strategy and the USMCR's use of a training allowance can be found in the Service's Chapter 3.

Chart 1-2. Beginning FY 2016 Reserve Component Equipment Shortages

Reserve Component	Requirements ($M)	On-hand ($M)	Shortage ($M)	Shortage (% of Reqd $s)
ARNG	106,269.0	82,346.0	23,923.0	22.5%
AR	32,896.5	24,023.3	8,873.1	27.0%
USMCR	9,667.1	7,163.6	2,503.5	25.9%
USNR	7,498.0	6,846.6	651.4	8.7%
ANG	36,900.0	34,359.2	2,540.8	6.9%
AFR	22,020.3	21,749.9	270.4	1.2%
USCGR	152.2	140.8	11.4	7.5%
Total	**215,403.1**	**176,629.4**	**38,773.7**	**18.0%**

Note: Requirements, on-hand, and shortage entries are total equipment value, excluding substitutes.

VII. Equipment Procurement

The RC procurement funding levels for the period FY 2009–FY 2017 are provided in Chart 1-3. The two sources of RC procurement funding are the RC portion of the Service base procurement appropriations and the separate NGREA funding provided by Congress to meet urgent equipment needs of the RCs.

The RC portion of the base Service procurement funding is provided in the Service Procurement Programs – Reserve Components (P-1R), a budget exhibit in the annual President's Budget (PRESBUD) request. Chart 1-3 updates the P-1R values for past fiscal years as each new PRESBUD is released. The P-1R funding for a given fiscal year appears in three successive PRESBUDs, as the original budget request, followed by P-1R updates in two successive PRESBUDs. The P-1R updates for a fiscal year reflect changes to the original request that may increase or decrease the procurement funding intended for the RCs. Those changes include the actual Congressional appropriation enacted, Supplemental funding, Overseas Contingency Operations (OCO) funding, and Service reprogramming.

As shown in Chart 1-3, the total RC P-1R funding has decreased steadily from a FY 2009 peak of $8.2B down to $2.9B in FY 2017. Chart 1-4 shows a downward trend in the percentage of DOD procurement levels for RC back to the levels seen from FY 2003 to FY 2006. The depiction of these two corresponding trends leads to concerns that the decreasing RC new procurement will result in a higher reliance on legacy systems and widen the gap of interoperability between the AC and RC.

Total annual NGREA funding added by Congress has averaged $1.1B from FY 2009 to FY 2016. However, NGREA has almost doubled from 13 percent of the total RC procurement funding in FY 2009 to 24 percent in FY 2016. In FY 2016, NGREA funding is 72 percent of the AFR's total procurement funding and 55 percent of the ANG's.

Chart 1-3. Reserve Component Procurement Funding

FY	Procurement Funding Source	RC Procurement Funding ($M)							
		ARNG	AR	USMCR	USNR	ANG	AFR	Total	Grand Total
2009	President's Budget P-1R (PY)	5,867.9	1,267.0	33.4	203.4	624.4	170.1	8,166.1	
	NGREA	778.6	127.3	62.4	62.4	154.7	62.4	1,247.8	
	Total	**6,646.5**	**1,394.3**	**95.7**	**265.8**	**779.0**	**232.5**		**$9,413.9**
2010	President's Budget P-1R (PY)	3,094.4	1,482.6	40.3	137.0	541.1	155.3	5,450.6	
	NGREA	575.0	85.0	45.0	55.0	135.0	55.0	950.0	
	Total	**3,669.4**	**1,567.6**	**85.3**	**192.0**	**676.1**	**210.3**		**$6,400.6**
2011	President's Budget P-1R (PY)	3,929.4	1,198.0	24.5	135.9	432.3	95.2	5,815.2	
	NGREA	250.0	137.6	69.0	70.0	250.0	68.2	844.8	
	Total	**4,179.4**	**1,335.5**	**93.5**	**205.9**	**682.3**	**163.4**		**$6,660.0**
2012	President's Budget P-1R (PY)	3,262.2	968.0	8.5	170.1	315.9	190.6	4,915.3	
	NGREA	320.3	145.0	63.0	75.0	315.0	75.0	993.3	
	Total	**3,582.4**	**1,113.0**	**71.5**	**245.1**	**630.9**	**265.6**		**$5,908.6**
2013	President's Budget P-1R (PY)	1,643.9	667.0	19.2	376.1	276.8	310.9	3,293.9	
	NGREA	460.0	240.0	120.0	90.0	455.0	130.0	1,495.0	
	Total	**2,103.9**	**907.0**	**139.2**	**466.1**	**731.8**	**440.9**		**$4,788.9**
2014	President's Budget P-1R (PY)	1,952.1	382.0	59.0	187.8	231.9	696.6	3,509.3	
	NGREA	315.0	175.0	60.0	65.0	315.0	70.0	1,000.0	
	Total	**2,267.1**	**557.0**	**119.0**	**252.8**	**546.9**	**766.6**		**$4,509.3**
2015	President's Budget P-1R (PY)	1,851.2	551.8	59.1	145.3	361.4	254.8	3,223.5	
	NGREA	415.0	185.0	60.0	65.0	415.0	60.0	1,200.0	
	Total	**2,266.2**	**736.8**	**119.1**	**210.3**	**776.4**	**314.8**		**$4,423.5**
2016	President's Budget P-1R (CY)	2,098.4	477.0	73.5	257.4	269.0	54.6	3,230.0	
	NGREA	330.0	140.0	10.0	50.0	330.0	140.0	1,000.0	
	Total	**2,428.4**	**617.0**	**83.5**	**307.4**	**599.0**	**194.6**		**$4,230.0**
2017	President's Budget P-1R (R)	1,978.2	421.4	36.6	199.8	192.0	50.3	2,878.4	
	NGREA								
	Total								

Note 1: P-1R values reflect latest FY update in President's Budget. R: Request; CY: Current Year; PY: Prior Year.
Note 2: The above figures do not include Ammunition procured for the RC.
Note 3: USNR figures include USMCR aircraft procurement funds.
Note 4: 2011-2013 NGREA reduced by $16.9M FY 2013 Sequestration Reduction.

Chart 1-4. Total Active and Reserve Component Procurement Funding

FY	P-1 Total ($M)	AC Total ($M)	RC Total ($M)	RC %	PRESBUD P-1 & P-1R Funding Source
2003	54,187.0	52,202.6	1,984.4	3.7%	Prior-Year
2004	55,685.8	54,188.3	1,497.5	2.7%	Prior-Year
2005	71,951.7	70,022.9	1,928.8	2.7%	Prior-Year
2006	75,380.8	72,701.4	2,679.4	3.6%	Prior-Year
2007	101,308.4	93,414.8	7,893.6	7.8%	Prior-Year
2008	125,306.0	119,191.7	6,114.3	4.9%	Prior-Year
2009	98,081.3	89,915.2	8,166.1	8.3%	Prior-Year
2010	97,601.1	92,150.5	5,450.6	5.6%	Prior-Year
2011	92,146.2	86,331.0	5,815.2	6.3%	Prior-Year
2012	81,205.3	76,289.9	4,915.3	6.1%	Prior-Year
2013	68,465.1	65,171.1	3,293.9	4.8%	Prior-Year
2014	67,496.4	63,987.1	3,509.3	5.2%	Prior-Year
2015	69,700.3	66,476.8	3,223.5	4.6%	Prior-Year
2016	80,338.6	77,108.6	3,230.0	4.0%	Current Year
2017	74,110.0	71,231.6	2,878.4	3.9%	Request

Note 1: P-1 and P-1R values reflect latest FY update in President's Budget (Request, Current Year, or Prior Year).
Note 2: P-1 & P-1R values do not include Ammunition appropriations.
Note 3: P-1 values include only appropriations displayed in P-1R:
Army: Aircraft, Missile, W&TCV, and Other Procurement
Navy & Air Force: Aircraft, Other Procurement, and Marine Corps.

VIII. The Reserve Components' Equipping Concerns

This segment briefly summarizes the principal equipping concerns of each RC. The components' individual chapters treat these subjects in more detail.

A. The Army National Guard (ARNG)

The ARNG of 2016 is manned, trained, equipped, and experienced at historically high levels. This is a direct result of the resourcing and legal authorities that Congress has dedicated to this purpose over the past fifteen years. As an operational force, the ARNG is resourced, trained, ready, and utilized on a continual basis, conducting the full spectrum of military operations in all environments as part of the Total Force. In 2011, ARNG Equipment On-hand (EOH) was at 77 percent. At the end of FY 2014, total EOH was up to 93 percent. Critical Dual Use (CDU) equipment is equipment that is designated to support disaster relief and domestic crisis response as well as contingency operations. The current CDU EOH is 92 percent.

The National Commission on the Future of the Army (NCFA) commissioned by the President has expressed that limited investment in Army modernization is significantly disconcerting,

particularly in reference to aviation; ground combat vehicles; chemical, biological, radiological and nuclear (CBRN) equipment; and communication assets.[1]

This adds credence to the ARNG's top equipping needs, which include modernization of their helicopter fleets and tactical wheeled vehicle fleets as well improving interoperable capabilities through modernization of Capability Sets. This includes fielding of Increment 1 Capability Sets to Infantry Brigade Combat Teams in FY 2018. These specific challenges are outlined in detail in Chapter 2, Section II of this report.

B. The Army Reserve (AR)

As a critical component of our Nation's defense, the Army Reserve is designed to provide specialized units not found anywhere else in the Army and joint forces. This includes sustainment, medical, transportation, engineering, and cyber capabilities too expensive to maintain in the AC but necessary for major operations whether at home or abroad. Since September 11, 2001, more than 300,000 Army Reserve Soldiers have mobilized and deployed globally in direct support of Army and joint forces.

Equipment procurement through new production, equipment redistribution, and divestment have improved equipping readiness levels necessary for the Army Reserve to accomplish a full range of missions as a component of the operational force. In FY 2015, the Army Reserve EOH posture improved to 89 percent due to new procurement and the redistribution of equipment. Though redistribution of equipment is providing a cost-effective near-term solution for filling equipment shortages in a period of fiscal constraint, due to sequestration the modernization rates have dropped by 2 percent from 76 to 74. The Army Reserve's increased use of legacy systems as substitutes continues to challenge its ability to afford long-term sustainment costs and risks interoperability of critical enabling capabilities essential to the operational force. Interoperability in Mission Command systems is of particular concern. Nearly 90 percent of AR Mission Command systems are not on par with current AC and joint force systems. Substitute items consisting of multiple model variations further challenge efforts to affordably maintain aging fleets and sustain readiness.

The Army Reserve's specific top equipping challenges are outlined in Chapter 2, Section III and include concerns with regard to lower funding levels due to the impacts of sequestration. Over the past 15 years, the AR has become a necessary part of the Army's operating force. Because of OCO funding invested by Congress, the Army Reserve has cemented its operational role. As OCO funds become scarce due to reduced contingency operations, it is imperative that momentum and quality of the AR is not lost. The NCFA echoes this need for an operational reserve that provides strategic depth, capability, and flexibility, which the Army Reserve brings to the Nation's Armed Forces. However current budget trends are creating funding imbalances impacting readiness and delaying efforts to fill modernization shortages of tactical wheeled vehicles by extending fielding timelines. Retaining less modern legacy petroleum platforms in the Army Reserve is an example of an at-risk capability that will potentially hinder direct support to joint force operations if equipment is not modernized.

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[1] National Commission on the Future of the Army, *Report to the President and the Congress of the United States*, January 28, 2016, p.50.

C. The United States Marine Corps Reserve (USMCR)

Marine Forces Reserve (MARFORRES) has evolved from a strategic capability to an operational and strategic capability. In the operational role, MARFORRES units and personnel are routinely incorporated into preplanned, rotational, and routine combatant commander and Service requirements across the spectrum of military operations in support of the joint force. In the strategic role, MARFORRES supports the combatant commanders with exercise involvement and focused readiness that coherently enables a rapid transition to operational roles in support of major contingency operations. In addition, the RC provides individual augmentation to regional Marine Forces and Marine Expeditionary Force staffs to reinforce AC staffs across all warfighting functions.

The Marine Corps Reserve's top equipping challenges are specifically articulated in Chapter 3 Section II. The USMCR continues to transition to the KC-130J Super Hercules aircraft. The fielding completion for this aircraft is anticipated in FY 2022. This lengthy fielding timeline creates compatibility and operational challenges with AC counterparts. The USMCR is also concerned about the fielding of the MQ-21A Blackjack Small Tactical Unmanned Aircraft System (STUAS), which also has a lengthy expected fielding completion date of FY 2021 that extends a capability gap between RC and AC forces.

D. The United States Navy Reserve (USNR)

Today's Navy Reserve continues to provide vital strategic depth and operational capabilities to the Navy and Nation. The RC provides rotational forces for traditional mission taskings that are periodic and predictable; it also complements the AC by providing the majority of operational capacity in intra-theater airlift, adversary support, cargo afloat rigging teams, cargo handling battalions, and rotary-wing support to special operations forces.

The Navy Reserve's top equipment priorities, outlined in detail in Chapter 4, are focused on the recapitalization of aging aircraft for Reserve aviation squadrons and the purchase of watercraft and expeditionary hardware for Coastal Riverine Force, Naval Construction Force, and Navy Expeditionary Logistics Support Group units.

E. The Air National Guard (ANG)

The ANG is fully vested in fighting America's wars and supports each Air Force core mission area as a fully integral member of the Total Air Force for both home and overseas missions, performing nearly 30 percent of the Air Force mission each day. There are approximately 1,145 aircraft in the Air Guard's inventory contributing to nearly 31 percent of the fighter capability, 38 percent of the airlift capability, and 40 percent of the air refueling tanker fleet in the Total Air Force.

The ANG's aging aircraft fleet faces significant sustainment and support costs. The average age of ANG aircraft is now 29.7 years with the oldest platforms being the KC-135R and KC-135T fleet at an average of 54.3 years. Modernizing, maintaining, and replacing these capabilities in the current fiscally constrained environment presents significant challenges. The prolonged high tempo of ANG operations overseas drives the need to simultaneously modernize and recapitalize ANG aircraft fleets along with the equipment required to maintain them.

The ANG's top equipping challenges are outlined in Chapter 5, Section II. Current concerns specifically address modernization and procurement of aging weapons, communications and network systems some of which are below Federal requirements. The annual FY 2015 *Weapons Systems Modernization Priorities* book documented a $10.7B shortfall for modernization and recapitalization of the ANG aircraft fleet and associated equipment.

F. The Air Force Reserve (AFR)

The AFR is fully engaged across the full spectrum of operations, providing the strategic capacity to respond to national crises and the day-to-day operational capability to maintain ongoing missions. Over the last year, approximately 4,600 Reservists contributed each day to global Air and Space Expeditionary Force (AEF) deployments and day-to-day missions such as cargo airlift, Single Integrated Operational Plan nuclear alert, Reaper and refueling operations, and Joint Chiefs of Staff and Major Command exercises.

Air Force Reserve equipment requires compatibility with the AC to support applicable Air Force missions. This compatibility with the AC is also critical to ensuring the Selected Reserve has the ability to train to AC standards and be ready to operate with AC counterparts. With Congressional funding received to date, the AFR has been able to keep its mission equipment compatible with the AC. With the average age of AFR aircraft approaching 50 years, it is becoming more apparent that replacement of those aircraft is necessary. Maintainability, mission capability, AC compatibility, and increasing operational costs dictate replacement in the near future of almost the entire AFR fleet.

The AFR's specific top equipping challenges are outlined in Chapter 5, Section III. Of most concern is the need to improve aircraft survivability during combat operations as well as the need for improved targeting systems. Diminishing Manufacturing Sources and Material Shortages (DMSMS)/Obsolescence is also troublesome. Due to technological advancements, many aged systems that need repair no longer have appropriate parts being manufactured. This creates a "crisis management" environment to maintain operation of these systems.

G. United States Coast Guard Reserve (USCGR)

As an integral partner of the United States Coast Guard the USCGR is uniquely positioned to conduct defense operations in support of DOD. To support the National Military Strategy, the Coast Guard conducts Maritime Interception Operations; Maritime Environmental Response; Port Operations, Security, and Defense; Theater Security Cooperation; Coastal Sea Control; Rotary Wing Air Intercept Operations; and Operations to Combat Terrorism.

A key component of the Coast Guard's Defense Operations mission is the Port Security Unit (PSU), which can operate independently in an expeditionary environment or be embedded within the Navy's Coastal Riverine Force. The eight Coast Guard PSUs are unique because they are principally Reserve-staffed units, consisting of only six AC personnel within a 150 total complement.

The USCGR's specific top equipping challenges, outlined in Chapter 6 Section II, are predominantly focused on recapitalization upgrades, and replacement of aging and worn equipment due to the high operating tempo over the last fifteen years. Examples include the

recapitalization of vehicles approaching end of life-cycle as well as procurement of modernized communications kits facilitating interoperability with DOD partners by providing access to secure and non-secure data encryption. Upgrades are anticipated to occur throughout the fleet in FY 2015. The Coast Guard Small Boat Product Line continues working to fully integrate logistics support for the Transportable Port Security Boat (TPSB) Generation IV and Response Boat-Small (RB-S) Generation II boat platforms. Integration is expected to be complete by December, 2015. In FY 2014, PSUs began the transition from 40 caliber pistols and M16A2 rifles to a 9mm pistol and a full complement of M4 variant rifles. This acquisition will allow PSUs to leverage DOD supply chains and logistical infrastructure.

Chapter 2
United States Army Reserve Components

I. Army Overview

A. Army Planning Guidance

The *2014 Army Strategic Planning Guidance* codifies the Army's ability to prevent conflicts, shape security environments, and win wars. Today's Army prevents conflict and destabilizing activities through its global posture and credibility as a modern, combat-ready force. The Army also shapes the security environment to create security conditions favorable to U.S. and allied interests. If prevention fails and shaping proves insufficient, the Army remains ready, as part of the Joint Force, to win a war by decisively defeating an adversary.

The 2014 Army Operating Concept calls for a regionally engaged, globally responsive force capable of conducting expeditionary maneuver and joint combined arms operations. Expeditionary maneuver involves the rapid deployment of task-organized, combined arms forces able to transition quickly and conduct operations of sufficient scale and ample duration to achieve strategic objectives.

Joint combined arms operations are the synchronized, simultaneous, or sequential application of two or more arms or elements of one Service, along with joint, interorganizational, and multinational capabilities combined with leadership and education across Services to ensure unity of effort and create multiple dilemmas for the enemy. Army forces capable of conducting expeditionary maneuver and joint combined arms operations will provide the Joint Force multiple options, integrate the efforts of multiple partners, operate across multiple domains, and present enemies and adversaries with multiple dilemmas.

The 2015 Army Vision builds upon the Army Operating Concept. It provides the intellectual foundation for the Army's efforts to prevent conflicts, shape security environments, and win wars. Through its Total Force Policy, the Army will continue to seamlessly integrate the Active, Guard, Reserve, and Civilian components. The Army remains committed to ensuring the Total Force is manned, trained, organized, sustained, equipped, and employed to support combatant commander requirements.

B. The Army Equipping Guidance

The *Army Equipping Guidance 2013 through 2016* describes the strategic environment and how it relates to equipping the force. The guidance includes the policy and goals for equipping the Active Component (AC) within the operational and generating force and the Reserve Component (RC) operational and generating force. The underlying foundation of the guidance is to identify and minimize equipping risks and costs as the Army transitions from Afghanistan, through sequestration, toward regionally aligned, and mission tailored forces. The scope of the guidance includes the Total Army: the AC and the RC (Army National Guard [ARNG] and the United States Army Reserve [USAR].) The guidance encompasses three lines of effort: equipping units for their missions, increasing readiness by redistributing equipment, and saving money.

1. Equipping Units for Their Missions

Since 2006, the Army has used Army Force Generation Model (ARFORGEN), which is based on structured progression of readiness over time, to produce trained, ready, and cohesive units. The guidance directs that units be provided additional equipment at critical equipping points based on their ARFORGEN phase or force generation pool.

Additionally, the guidance emphasizes equipping non-rotational units such as the generating forces that train Soldiers and ensures that the RCs have equipment to support homeland defense (HD) and defense support of civil authorities (DSCA) responsibilities. In accordance with Department of Defense Directive (DODD) 1200.17, *Managing the Reserve Components as an Operational Force*, this line of effort equips the RCs with the operational capabilities and strategic depth required of an operational force. Department of Defense Instruction (DODI) 1225.06, *Equipping the Reserve Forces* ensures they will be "consistently and predictably equipped" and that the "priority for the distribution of new and combat serviceable equipment, with associated support and test equipment, shall be given to units scheduled for mission deployment or employment first, regardless of component."

2. Increasing Readiness by Redistributing Equipment

This supporting effort's focus is to move equipment we already own or will procure in the near term to increase overall unit readiness. As result of the drawdown from Afghanistan, the Army is transitioning away from a theater-provided equipment model to a pre-positioned and training activity set. The guidance also ensures continuing equipment paybacks to the RC in accordance with DODI 1225.06, *Equipping the Reserve Forces*.

3. Saving Money

This last line of effort emphasizes Army processes and policies that take into account the significant reduction in funding under the Budget Control Act (BCA), also known as Sequestration. The Army must focus on preserving as much of the budget as possible for force modernization required to achieve and sustain future capabilities. We must divest expensive older systems, excess equipment on-hand (EOH), and non-standard equipment when appropriate. Additionally, we must ensure equipment distribution and redistribution is accomplished at the lowest levels.

In all cases, decisions must be based on accurate knowledge of EOH. Accountability of equipment must be established and maintained through accurately and rapidly documenting inventories to enable 100 percent visibility. The Army's effort to ensure AC and RC equipment is properly accounted for and distributed to the appropriate component is known as transparency. Implementing Congressionally mandated transparency requires two steps. First, component-level funding and procurement quantities are included on key Congressional budget exhibits. The second step is tracking delivery of funded equipment. The format for this tracking effort was standardized for all of the Military Services and is called the Equipment Transparency Report, provided semiannually to the Office of the Assistant Secretary of Defense for Readiness (OASD[R].)

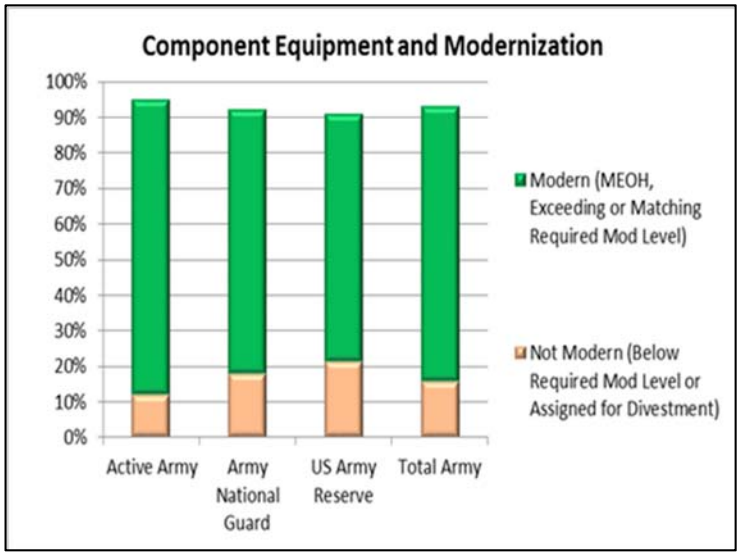
C. Army Equipping Assessment

Recently, the Army began using a qualitative methodology to assess equipment shortfalls and help guide investment toward equipment that best meets future warfighting requirements. Equipment that best meets the warfighter requirement is both available and modern. The use of Modernization Levels takes the Army from simple quantitative assessment of EOH to a qualitative measure of EOH that informs leaders on where our investments can best modernize the Army. The qualitative assessment includes modernized replacements and substitutes (equal to or greater than required modernization levels) to calculate shortages and the value of on-hand equipment. This ensures the actual Army shortages are not overstated and allows leaders to invest in newer weapon systems.

The qualitative approach is superior to the simple approach of measuring EOH, but it only helps to mitigate the effects of inconsistent and unreliable funding. Lack of fiscal predictability makes long-term planning difficult, resulting in equipment that costs more to procure and longer to acquire. This contributes to the fact that by FY 2017 only 77.4 percent (see Table 2-1) of all Army equipment will meet Army modernization requirements.

If funding were reduced to "sequestered" levels (Budget Control Act), the Army and its RCs will experience increased equipment shortages and greatly reduced levels of modernization. We cannot predict the extent of this without knowing exactly when and how sequestration would be applied, but we expect readiness will be proportionally impacted.

1. Equipping Background and Process



The objective of Army equipping is to maintain the highest level of unit readiness and provide Soldiers the most modern equipment possible. Army "go to war" equipment readiness in FY 2017 is over 93 percent (see Table 2-1.) This is an accurate metric for deployment and operational planning but would distract us from programming limited new procurement resources to optimize modernization efforts. Programming new equipment resources to provide the highest level of unit readiness, for tomorrow's Army, requires that modernization levels be applied to line item numbers (LIN). Modernization levels inform leaders of the relevancy of Army equipment. For discussion purposes the "Component Equipment and Modernization" bar graph consolidates Army EOH into two categories: "modern" (meets or exceeds warfighter requirements) and "not modern" (meets minimum requirements and may be sufficient for deployment, with waiver, but targeted for upgrade, replacement, or divestment based on overall warfighter priorities and resource availability.)

The “go to war readiness and EOH” table shows different EOH calculations and the impact of “modern” and “not modern” considerations on shortage costs. For programming decisions the “current modernized shortfall” shows about 23 percent of our equipment is below the desired level of modernization and would cost over $44.7B to fill.

Table 2-1 “Go to War” Readiness and EOH

			Modified Version of EOH (MEOH)					
Component		Equipment Current Requirement	Modern Equipment Matching Current Requirements	Equipment Exceeding Current Requirement Modernization Level	Equipment Below Requirement Modernization Level, but authorized for Deployment	"Go to War" Current Total EOH	Current Modernized Shortfall	Current EOH Shortfall
Active Army	$ Value	$144,361,874,805	$122,633,562,348	$734,904,367	$711,013,374	$124,079,470,089	$20,993,418,090	$20,282,404,716
	% Fill	100.00%	83.10%	0.02%	11.93%	95.06%	16.88%	4.94%
Army National Guard	$ Value	$106,269,017,158	$88,556,659,229	$28,919,991	$1,530,931,069	$90,116,510,289	$17,683,437,938	$16,152,506,869
	% Fill	100.00%	74.39%	0.01%	17.89%	92.30%	25.59%	7.70%
US Army Reserve	$ Value	$32,896,454,533	$26,788,174,998	$2,404,509	$359,856,662	$27,150,436,169	$6,105,875,026	$5,746,018,364
	% Fill	100.00%	70.08%	0.01%	21.13%	91.17%	29.96%	8.83%
Total Army	$ Value	$283,527,346,496	$237,978,386,576	$766,228,867	$2,601,801,104	$241,346,416,547	$44,782,731,053	$42,180,929,949
	% Fill	100.00%	77.41%	0.02%	15.87%	93.30%	22.57%	6.70%
			77.43%					

D. Initiatives Affecting RC Equipment

1. Current Operations

The Army's operational tempo in support of overseas contingency operations (OCO) has decreased, but still places a strain on the force. As the operating tempo slows, the Army moves to a boots-on-the-ground dwell ratio of 1:2 (in years) for the AC and a Mobilization: Demobilization ratio of 1:4 for the ARNG and USAR. The next 10 years will be a dynamic environment of changing operational demands coupled with reduced defense spending. The Army's goal is to have an affordable and versatile mix of "tailorable" and networked units operating on a rotational cycle and capable of full spectrum operations. Regardless of the Mobilization: Demobilization ratios, the Army is committed to ensuring ARNG and USAR units are equipped to execute their HD and DSCA missions as well as other operational requirements.

To this end, Headquarters, Department of the Army (HQDA), ARNG, and USAR validate, and update the Critical Dual Use (CDU) equipment list annually, identifying MTOE items necessary for accomplishment of ARNG and USAR Federal missions. The minimum acceptable level of CDU equipping remains 80 percent on-hand. This provides a sufficient pool of equipment that, within the constraints of overall Army equipping levels, meets the goal of ensuring the ARNG and USAR always have the equipment necessary to meet domestic operational requirements. The Army identifies the CDU equipment necessary for Army units and personnel to assist civil authorities in responses to natural disasters, acts of terrorism, and other incidents as identified in national planning scenarios. The following three topics describe the Army efforts to bring ARNG and USAR capabilities in line with future demands: Operationalizing the Reserves, Transparency, HD and DSCA.

2. Operationalizing the Reserves

Today's Army was built as a Total Force (AC, ARNG, and USAR), and demands for U.S. ground forces have required almost continuous operational use of the ARNG and USAR to meet requirements. As part of our overall efforts to build the Army of the 21st century, it is important

that we take a critical look at how the Army plans to use the ARNG and USAR in the future and what policies governing this use will require modification to achieve more efficient mobilization and effective employment of ARNG and USAR forces.

The Army has made significant progress in transforming the ARNG and USAR from strategic reserves into operational forces that are fully integrated into the Army's Force. In parallel with a Secretary of Defense-directed review, the Secretary and Chief of Staff of the Army commissioned an independent panel to review the policies and assumptions governing use of the ARNG and USAR to ensure that we can deliver a sustained flow of trained and ready land forces to meet the challenges of the 21st century. The panel reported that operationalizing was the correct approach, and that the Total Force concept needs to be institutionalized to increase the talent pool available for operations. It reported, "While there are issues to address with an operational reserve, the benefits far outweigh the challenges and represent the best path forward."[1]

3. Transparency

In 2008, as a result of the Commission on the National Guard and Reserves, the Secretary of Defense directed the Military Services to provide increased transparency of equipping the RC. Specifically, the Military Services were charged with providing increased visibility and accountability of National Guard and Reserve equipment in the formulation of the annual budget, and for tracking ARNG and USAR equipment through the acquisition process from procurement to delivery. The Army has complied with this reporting requirement since 2009, through the submission of the Equipment Transparency Report (ETR).

Collecting the data is still largely a manual process for the Army because the databases currently in use were not designed to link a piece of equipment delivered to a unit with the funding that resourced the procurement. DOD's Item Unique Identification (IUID) effort will significantly improve visibility of this process when it is fully implemented by the Army in FY 2017.

Oversight of the transparency effort is maintained by a multi-component General Officer Steering Committee that meets quarterly and reviews programming, budgeting, procurement, and delivery data. In 2015, the Army formally assigned responsibility for transparency reporting to the various organizations responsible for providing the data for the ETR through a policy memo signed by the Secretary of the Army. These responsibilities will be captured in an upcoming update to Army Regulation 700-142, *Type Classification, Materiel Release, Fielding, and Transfer*.

4. Homeland Defense and Defense Support of Civil Authorities

The Army is playing an increasing role in HD and DSCA missions. In accordance with direction from the Secretary of Defense, the Army will provide the bulk of the Defense Chemical, Biological, Radiological, and Nuclear Response Force for FY 2014 and beyond. The Army provides specific capabilities for HD and DSCA in the event of an attack against the United States or DSCA in the event of a manmade or natural disaster. These capabilities come from all

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[1] Dennis J. Reimer, Roger C. Shultz, and James R. Hemley, *The Independent Panel Review of Reserve Component Employment in an Era of Persistent Conflict*, November 2, 2010, p. 56.

Army components in support of United States Northern Command's (USNORTHCOM) DSCA mission in the event of an incident.

The equipment used by the ARNG and USAR to conduct DSCA missions and, in the case of the ARNG state missions, are dual-use equipment that comes primarily through Army base budget procurement and commercial off-the-shelf equipment procurement by the ARNG and USAR. It also includes equipment that has been cascaded from the AC to the ARNG and USAR. Like AC units, as ARNG and USAR units progress through the Reset and Train/Ready phases, they will be equipped at less than 100 percent. This represents risk in the ability to respond to HD and DSCA missions. Placing emphasis on procurement and management of CDU items will help ensure that the necessary equipment is available for mission execution.

E. Plan to Achieve Full Compatibility between AC and RC

The ARNG and USAR are operational components, and they can continue to expect to serve together with AC units in any theater. The Army equips all ARFORGEN units with the most modern and most capable equipment available, based on the units' mission. Because of this, the ARNG and USAR units receive the same equipment as their AC counterparts when assigned similar missions. The Army is also committed to fulfilling its DODI 1225.06 requirements to replace ARNG and USAR equipment transferred to the AC. At the time of this publication, the Army had reduced the number of items it owes the ARNG and USAR from over 85,000 to 745 pieces of equipment.

II. Army National Guard Overview

A. Current Status of the Army National Guard

1. General Overview

In FY 2015, the Army National Guard (ARNG) mobilized a total of 8,102 Soldiers around the world in support of Title 10 operations. This includes 3,069 to Kuwait, 896 to Afghanistan, 726 to Djibouti (Horn of Africa), 573 to Cuba (Guantanamo Bay), 538 to Egypt, 523 to Kosovo, 367 to U.S. locations (National Capital Region, Base Support, etc.), 362 to the United Arab Emirates, 306 to Bahrain, 194 to Jordan, 136 to Uganda (Horn of Africa), 124 to Qatar, 115 to Iraq, and 173 to other locations. These numbers accounted for 13 battalion-sized units and 91 company-sized units.

Top ARNG Focus Areas

- Remain an operational force that is manned, equipped, and trained to successfully conduct Federal and domestic operations.
- Modernize the ARNG helicopter fleet while executing approved Aviation Restructure Initiative decisions.
- Modernize the ARNG tactical wheeled vehicle fleet while preparing to integrate the Joint Light Tactical Vehicle into the inventory.
- Improve command and control interoperability capability by modernizing Capability Sets and fielding Increment 1 Capability Sets to Infantry Brigade Combat Teams in FY 2018.
- Convert, man, and equip an Armored Brigade Combat Team to a Stryker Combat Team in FY 2017 capable of conducting Combat Training Center (CTC) rotation in FY 2018.

Congress' continued support of Army procurement and the Army's continued utilization of the ARNG as an operational force have resulted in improvements to the ARNG equipment posture and increased equipment on-hand (EOH), Critical Dual Use (CDU) equipment, and overall equipment modernization levels. In 2011, Modified Table of Organization and Equipment (MTOE) EOH was at 77 percent. At the end of FY 2014, MTOE EOH was up to 93 percent. The current MTOE CDU EOH is 92 percent.

By capitalizing on past investments, the ARNG is one of the best options available for our Nation to preserve military capability, capacity, and depth concurrently. Resources remain the principal reason the ARNG is an operational force, and have elevated the ARNG to a higher level of modernized equipment on-hand than at any time in its history.

a. Status of the ARNG as an Operational Force

As a direct result of the resourcing and legal authorities that Congress dedicated to equipping, manning, and training our operational forces over the past decade, the ARNG is now at a historically high level of readiness. The ARNG's prudent use of their resources has contributed greatly to becoming an operational force capable of providing the capabilities and strategic depth necessary to successfully meet both its national defense and state missions. An operationalized and trained ARNG force must be nested within the National Defense Strategy, firmly integrated into national level war plans, and directed towards national objectives. Resourced, trained, ready, and utilized on a continual basis, conducting the full spectrum of military operations in all environments, the ARNG is an intricate operational part of the Total Force.

The Nation's investment in an Operational ARNG has more than paid for itself in added responsiveness, flexibility, and readiness available in a Reserve Component (RC) where less than 20 percent of the personnel serve in a full-time Active Guard and Reserve (AGR) or dual-status Technician status. The resources and time used to prepare the ARNG for overseas service has served the United States well. The ground work and preparation for war has developed the ARNG into an exceptionally current organization capable of responding to domestic emergencies. It retains the capability of providing ready forces with modernized, dual use equipment and effectively manages their use through Mission Command force structure and systems. The ARNG will continue to be poised to support Federal and state missions as well as the State Partnership Program in numerous countries around the world.

b. Operational ARNG—Defense Support of Civil Authorities and State Missions

Each year the ARNG performs approximately 180–220 state missions (see Table 2-2 below.) In 2015 the ARNG state missions included the Northeast Winter Storm with record breaking snowfall. With seven states significantly impacted: Connecticut, Maine, Massachusetts, New Hampshire, New York, Pennsylvania, and Rhode Island, the ARNG was crucial in supplying basic life support to stranded personnel.

Table 2-2. FY 2015 Defense Support of Civil Authorities and State Missions

Event Type	Event Amount	Event Type	Event Amount
Key asset protection	2	Search and rescue	47
Law enforcement support	6	Water support	4
Winter storm response	9	Tornado	1
Flood	7	Explosive ordnance disposal (EOD)	4
Special event	11	Southwest border	5
Wild Fire	19	Severe weather	4
Civil Support Team response	130	Counterdrug	2
Hurricane—Tropical Storm	5	Other	14

i. Chemical, Biological, Radiological, Nuclear (CBRN) Response Enterprise

The ARNG comprises 55 percent of the entire DOD CBRN Response Enterprise (CRE) (approximately 10,263 ARNG Soldiers and 1,560 Airmen.) Based on the 2010 Quadrennial Defense Review, DOD assembled 10 National Guard Homeland Response Forces (HRFs). HRFs are joint task forces composed of both ARNG and Air National Guard (ANG) personnel. Each HRF consists of a mission command element, CBRN Task Forces, and Chemical, Biological, Radiological, Nuclear, and High-yield Explosive (CBRNE) Assistance Support Elements, totaling 566 personnel per HRF team. HRFs provide lifesaving capability within a 24-48 hour response time and mission command for other CRE elements in their area of operations. The HRF is designed to provide mission command for three National Guard CBRNE Enhanced Response Force Packages (CERFPs). The CERFP is the primary lifesaving capability of the National Guard elements of the CBRN Response Enterprise. Each HRF has an embedded

CERFP capability called a CBRN Task Force. For FY 2015 there are 57 Civil Support Teams, 17 CERFPs, and 10 HRFs within the National Guard.

Additionally, the Resource Management Decision 700 directed the standup of new CBRN Enterprise elements, and in FY 2012 transformed the three Chemical Consequence Management Response Forces into the Defense CBRN Response Force, Command and Control CBRN Response Element (C2CRE)-Alpha and C2CRE-Bravo. C2CRE-Bravo is comprised of approximately 1,500 ARNG Soldiers. When directed by USNORTHCOM, C2CRE-Bravo conducts CBRN operations to provide lifesaving, command and control, and logistics capabilities for follow-on forces within the USNORTHCOM area of responsibility to execute DSCA missions in response to CBRN incidents to save lives and minimize human suffering within a 72–96 hour response time.

ii. ARNG Division Headquarters, Domestic All-Hazards Response Team (DART), Domestic Coordination Cell (DCC)

The USNORTHCOM Concept Plan requires the establishment of DARTs. ARNG Division Headquarters facilitates the states' ARNG domestic all-hazards response, beginning at the lowest state echelon. This requires identifying the "Essential 10" capabilities and aligning them with the existing state all-hazards plan to fill capability-based gap requirements. The Divisions provide unity of command and effort that can support a state with individual and staff augmentation up to the full breadth of an Army Division and a two-star general Dual Status Commander.

The DART mission is split into DART East and DART West regions of the United States. Division Headquarters employ DCCs to continuously coordinate preplanned, scalable, capability-based National Guard force packages to meet states' identified capability gaps to quickly mobilize and deploy National Guard forces to an affected area upon request by a supported state's governor. If requested, the Division Headquarters deploy liaison officers; additional staff functional capabilities in support of the affected Joint Force Headquarters-State(s) and National Guard Bureau (NGB); and elements to provide Adaptive Battle Staff "staff in a box" support.

c. Operational ARNG-Support to Security Cooperation and Building Partner Capacity

The ARNG participated in 58 Joint Exercise Program and Army Service Component Command Exercises that built partner capacity and fostered enduring relationships with foreign nations; all in the support of the Geographic Combatant Commands' Theater Security Cooperation programs. Additionally, the 72nd Infantry Brigade Combat Team (Texas ARNG) provided capabilities to United States Southern Command (USSOUTHCOM) in support of Counter Transnational Organized Crime with South America, all in the role as the Army Regionally Aligned Forces to USSOUTHCOM. All events were sourced through the ARNG Overseas Deployment for Training Program. The ARNG deployed over 11,500 Soldiers in support of these Security Cooperation Activities, providing roughly 217,000 mandays of support to the Army.

2. Current Status of Equipment

The Army National Guard Equipping Posture, also known as the "Dashboard", is published twice a year (June/December) in coordination with HQDA G-8. The Dashboard does not give

mission-essential equipment more significance in the calculations. It is simply an overall aggregate of equipment on-hand measured against MTOE requirements both at the national level and for each of the 54 states and territories.

Critical Dual Use (CDU) equipment is a subset of the MTOE equipment, which is further broken down into Essential 10 Capability groups. Annually the Director of the Army National Guard submits a proposed list of equipment to HQDA G-3/5/7 for approval. Once the approved list is published it is the Army's goal to equip the CDU equipment to no less than 80 percent in order for units to properly respond to domestic situations as well as use it as their go-to-war equipment.

a. Equipment On-hand

As of June 2015, the Army National Guard had 92 percent of MTOE authorized equipment and 92 percent of CDU equipment with 89 and 90 percent available respectively to the governors. The primary reasons a piece of equipment is not available to a governor is that it is either in transit or is currently being used on a Title 10 mission such as a mobilization.

Equipment on-hand percentages will fluctuate due to force structure changes, but should only be minor since equipment on-hand is aggregated at the state and national levels. The Commander's Unit Status reports will see more turbulence since it is a monthly report and it is calculated at the unit level.

All states and territories are now fully using the Lead Materiel Integrator Decision Support Tool (LMI DST) to plan and execute equipment cross-levels intra-state, inter-state, and inter-component to maximize each unit's on-hand equipment in relation to its MTOE authorizations and to divest excess as well as obsolete equipment.

The LMI DST has enabled states and territories to better plan and execute their equipping plans with significantly less hand calculations, which allows them to be more successfully and fully execute plans on a much shorter timeline.

i. Table of Distribution and Allowances (TDA) Unit Equipment

Historically, TDA units have been a lower priority for fielding new equipment, although they may have a program of instruction to train Soldiers; they may inherently have older generation equipment and more shortages as they compete for resources and funding that will continue to shrink. Cross leveling of equipment to support TDA requirements will continue to be a challenge due to MTOE readiness requirements to support availability of units. However, units that have been designated to support HD and DSCA mission will continue to be a priority for materiel, and the Critical Dual Use equipment is vital to their success.

ii. Equipment Cross-leveling

The purpose of cross-leveling of equipment is to improve unit readiness. There are three categories of cross-leveling – Internal State Transfers, Excess Distribution, and Distribution of Non-excess equipment. Internal state cross-leveling is performed between units within the state, material release orders/lateral transfers from the United States Property and Fiscal Office warehouse or property book, and through stock funded purchases. Cross-leveling of one state's

excess to fulfill another state's shortage is the most common cross-leveling action. In April 2015, this process changed from Standard Army Retail Supply System/Global Combat System Support – Army (GCSS-Army) to the LMI DST. Distribution of non-excess equipment between states is done for mobilizations or other high priority events based on leadership guidance.

iii. DOD Instruction 1225.06-Equipment Transfer to Contingency Operations

Replacements of equipment transferred via the DOD Instruction (DODI) 1225.06, *Equipping the Reserve Forces*, continue to be tracked and received by the ARNG. These items were transferred from ARNG units to other units to support urgent warfighter needs in theater. The process for staffing and implementing DODI 1225.06 transactions has evolved. As progress is made, emphasis on the importance of preserving current equipment and receiving replacement equipment (within the RC) cannot be diminished. The ARNG must be prepared to respond to contingencies, both homeland and abroad. The current DODI 1225.06 processes in place provide a safeguard to ensure ARNG equipment is available and readiness levels are maintained within the 54 states and territories.

DODI 1225.06 transfers may be identified by HQDA, ARNG, or other agencies. ARNG staff coordinates with HQDA staff to best meet the needs of the combatant commanders and the Army. DODI 1225.06 provides greater transparency and traceability controls over RC equipment transfers. This includes transfers from one component to another, transfers within a component, diversions of planned distributions, as well as equipment inducted into maintenance facilities. Additionally, the instruction provides reporting requirements to provide transparency and accountability of ARNG equipment. The Army has also published additional supplementary instructions that clearly outline and define the Army internal processes and procedures that will be used to transfer ARNG and USAR equipment in accordance with DODI 1225.06. The ARNG, in conjunction with Army Sustainment Command and HQDA G-8, continues to monitor replacement requirements established since 2003 and approved by the Secretary of Defense. Through regularly scheduled Integrated Product Team meetings, consisting of members from HQDA, Army Materiel Command, ARNG, and USAR, all theater equipment transfers and replacement plans are properly annotated and tracked. The ARNG continues to work closely with Army Sustainment Command and HQDA to ensure equipment is returned and future transfers are properly executed.

iv. Property Accountability and Excess

The accuracy of ARNG unit property books is a crucial factor in maintaining an accurate overview of equipment readiness. The ARNG has several key programs currently in place designed to ensure the most accurate accountability of equipment. The quarterly Campaign on Property Accountability report, the quarterly Excess Equipment report, and the monthly General Equipment follow-on testing are three examples. The ARNG current average is 99.5 percent accurate, which is borderline to the goal of 99.5 percent or better. The ARNG has made tremendous strides toward more accurate inventory management and increased equipment readiness.

b. Average Age of Major Items of Equipment

The average age of ARNG equipment at the beginning of FY 2016 is provided in *Table 2 Average Age of Equipment*. An increase in manufacture and recapitalization programs through

FY 2015 alleviated the historical issue associated with aging equipment. In the past, the ARNG received much of its equipment through AC cascading actions. This cascaded equipment was often already at or near the end of its planned service life, and programmed replacements and rebuilding efforts could not keep up with the needs of the ARNG. There is a direct correlation between procurement and depot maintenance budgets. If the current budget levels remain the same, the average age of the fleet will continue to decrease; otherwise, it will increase.

c. Compatibility of Current Equipment with AC

The ARNG has made tremendous strides in bringing ARNG units up to full compatibility with the AC. By the end of FY 2016, the ARNG will have fielded Warfighter Information Network-Tactical (WIN-T) Increment 1b across the force and will have fully-compatible communication platforms with all AC units. As operational components, the RCs are expected to serve with the AC in all theaters. The Army currently equips all Army Force Generation (ARFORGEN) units with the most capable equipment available, based on unit mission. The ARNG and USAR are fielded the same equipment as the AC for similar missions. As the Army transitions to the Sustainable Readiness Model (SRM), the ARNG expects to continue to receive fully-compatible systems to execute its mission as an operational force.

d. Maintenance Issues

i. Field-Level Maintenance

Many ARNG shop facilities are more than 50 years old and were not designed or equipped to provide a safe, environmentally-friendly workplace capable of meeting the demands of the Army's two-level maintenance doctrine and to maintain a modern, technologically advanced fleet capable of fighting current and future conflicts. The Military Construction funding required for modernizing ARNG surface equipment maintenance facilities is conservatively estimated at $2.042B according to the ARNG Installation Division Planning Resource for Infrastructure Development and Evaluation database. Field-level maintenance is the first line of maintenance and is critical to ARNG equipment readiness in the ARFORGEN model and for HD, DSCA, and emergency operation missions. It is essential that the ARNG has modern maintenance shop facilities capable of sustaining our operational force's equipment.

ii. National-Level Maintenance

ARNG Surface Depot Maintenance Program funding is key to maintaining the readiness of the ARNG fleet. The depot overhaul and rebuild programs sustain ARNG EOH and extend the service life of its fleet, making it a key component of the ARNG sustainment strategy. Decreases in the ARNG depot sustainment maintenance activities would place greater pressure on operational tempo funding to sustain fleet readiness. The current ARNG Depot Maintenance Program funding level is $186M. This is 45 percent of the ARNG critical requirement of $412M in FY 2015. Planned reductions in the Depot Maintenance Program in FY 2015 and across the FY 2016–FY 2021 budget will significantly affect the program.

iii. Home Station Reset

In FY 2015, the ARNG continued field-level repair of equipment returning from overseas contingency operations (OCO) to Technical Manual 10/20 standards within the authorized 365 day timeline based on arrival of 51 percent of personnel at home station for applicable

ARNG units. In FY 2015, the ARNG Home Station Field Level Reset Program completed reset of over 80,061 pieces of equipment.

iv. Automatic Reset Induction (ARI)

Per HQDA, all units redeploying from OCO are required to turn in, or induct, 100 percent of identified ARI equipment items into sustainment level maintenance through designated Redistribution Property Accountability Team yards prior to redeployment to the continental United States (CONUS). The timely return of inducted ARI equipment through supply requisition processes is critical to the ARNG's maintaining of a constant, high state of unit readiness, as well as its ability to accomplish critical Federal, state, and local response missions.

e. Modernization Programs and Shortfalls

Efforts by Congress to modernize the Total Army have resulted in dramatic increases to modernized EOH across all Army components and have brought the ARNG equipment more in line with the AC inventory. This is critical to ensuring interoperability among all three components and to meeting the Secretary of the Army and Chief of Staff of the Army's strategic vision of obtaining and utilizing the "right mix" of AC/RC units to conduct Federal missions.

The Army defines equipment modernization as the procurement or modification of "a piece of equipment (component, sub-system, system) to fill a capability gap or replace it due to obsolescence. Continuous or incremental modernization allows us to fill capability gaps through the indefinite service life of our platforms." (*Army Equipment Modernization Strategy,* March 4, 2013)

The Army recognizes the need to identify modernized on-hand equipment that is deployable to combat operations. Without differentiating deployable equipment, the ARNG modernization levels would appear higher, because while the ARNG may have the right quantity of equipment, it may not have the right quality of equipment.

Based on June 2015 data, the projected ARNG EOH percentage for end of FY 2015 is 92 percent. This percentage reflects the Army's potential "go-to-war" level, meaning this equipment will be available for use in combat anywhere in the world. Not all of this "go-to-war" equipment is considered the most modern and capable equipment the Army has and as such increases risk to Soldiers using it.

The Modernized Equipment On-hand (MEOH) is used to measure the Army's modernization progress. MEOH excludes older substitutes and shows the modern inventory against requirements. Using the MEOH methodology, the FY 2015 MEOH percentage for the ARNG is 91 percent. The MEOH allows the Army to measure the equipping quality of the force over time at the aggregate and component levels.

The ARNG of 2015 is manned, trained, equipped, and experienced at historically high levels. This is a direct result of the resourcing and legal authorities that Congress has dedicated to this purpose over the past fourteen years. As an operational force, the ARNG is resourced, trained, ready, and utilized on a continual basis, conducting the full spectrum of military operations in all environments as part of the Total Force.

The equipping modernization and interoperability efforts are key priorities in the ARNG's Equipping Strategy. The modernization methodology may result in the Army calling a piece of equipment modern when it does not meet its definition of modernized equipment. There is a resultant direct effect on equipment shortfall calculations.

The risk that the ARNG will be unable to meet mission requirements increases if the role of the ARNG as an operational force and combat reserve of the Army is reduced, allowing the Army's unprecedented modernization of the ARNG to diminish.

i. High Mobility Multipurpose Wheeled Vehicle (HMMWV) Ground Ambulances

HMMWV Ground Ambulances are critical assets to the ARNG's Federal and state missions. The ARNG has purchased 503 HMMWV Ground Ambulances with FY 2010 National Guard and Reserve Equipment Appropriation (NGREA) funding, and 106 HMMWV Ground Ambulances with FY 2015 NGREA funding. NGREA funding, combined with directed Congressional funding since 2013, will result in the ARNG achieving 100 percent of its ambulance requirement and a 60 percent modernized ambulance fleet. Modernizing the ambulance fleet remains a high priority for the ARNG.

ii. Assault Breacher Vehicles

The Assault Breacher Vehicle (ABV) is a tracked combat engineer vehicle that provides critical capabilities to ARNG engineer units in the Armored Brigade Combat Team (ABCT). Funding and fielding the ABV remains a high priority for the ARNG. Currently, the ARNG has 12 ABVs on-hand in two ABCTs and plans to field six ABVs to one ABCT in FY 2016, leaving the ARNG with 60 percent EOH. The ARNG team is using multiple courses of action to procure the remaining 12 ABVs for the two remaining ABCTs.

iii. Capability Sets

The Capability Set is a package of network components, associated equipment, and software that provides an integrated network capability from the Tactical Operations Center to the dismounted Soldier. The complete list of systems included in the Capability Set may change over time due to acquisition strategy and system maturity. Near term fielding for the ARNG will include the WIN-T Increment 2 and Joint Battle Command-Platform. In addition to new mission command systems, updated software will be included for existing systems. WIN-T Increment 2 is the core system that provides the Brigade Combat Team (BCT) commander mission command capabilities "on the move." The ARNG plans to field two Capability Sets to one Infantry Brigade Combat Team and to one Division Headquarters in FY 2018. HQDA is currently funded to field up to three Capability Sets per year; therefore, it is imperative that ARNG leadership ensures that ARNG formations are included in the HQDA Capability Set fielding plans in the future.

f. Overall Equipment Readiness

As the military moves away from large overseas contingency operations in Iraq and Afghanistan, the after effects of more than a decade of war are becoming more apparent. The ARNG continues to manage readiness by prioritizing limited resources in accordance with guidance provided by Army leadership and strategic documents at the national, defense, and Army levels. Extensive EOH data analysis and the maturation of long-term equipping management initiatives

that provide data much faster and more accurately than ever before allow the ARNG to better monitor equipment readiness and continually identify opportunities to improve it.

g. Other Equipment Specific Issues

Congress and the Army continue to make great strides in equipping the ARNG to maintain its role as an operational force. Unfortunately, full-time surface maintenance technician manning levels have not kept up with the increased levels of equipment and operating tempo.

B. Changes since the Last NGRER

1. Preserving the Operational Army National Guard

The Director, ARNG (DARNG) indicated his determination to maintain the ARNG as an operational force through the *DARNG's Vision 2020*, July 2015. These essential goals will shape the ARNG over the next several years. These imperatives will help to ensure the ability to provide ready forces to meet the needs of the Nation and our governors. This tenet directly supports the Army Strategic Planning Guidance, which states that "the Army's determination to advance the capabilities gained over the last 14 years and "leverage the capacity and capabilities of the Total Force - Active, National Guard, Reserve, and Civilian (Total Force) - ensuring that both the operational and generating forces are optimized and aligned to support DOD and Army strategic priorities".

By forecasting through a progressive readiness model such as the SRM or as previously known, the ARFORGEN Model, which forecasts a predictable deployment schedule, we give Soldiers, their families and civilian employers a level of predictability they need to better organize their civilian lives and careers while developing critical military skills exercised through tough, realistic training, and operational employment. In this same vein, the ARNG recognizes the importance of access to and availability of modernized equipment. All funding must assure the Reserve Component equipment is modernized and fielded in tandem with the Active Component's. This will ensure readiness, support an operational force, and promote interoperability.

By effectively using the SRM model, we can assure that whether AC, ARNG, or Army Reserve components, the priority for equipping is to units scheduled for mission deployment or employment first, regardless of component. The main challenge posed with limited modernized resources falls primarily on realizing the progressive readiness within RC organizations within their five-year force-generation cycle. Although these units are consistently and predictably equipped, they are used less frequently than the AC due to the lower priority behind critical and essential mission requirements. If the Army is to preserve options for the future and provide the capabilities needed for future challenges, the operational ARNG must see continuous use in ongoing operations requiring rotational support, contingency, or security cooperation, and must be equipped and modernized on par with the AC.

2. Significant Major Item Shortages

Table 1 Consolidated Major Item Inventory and Requirements and *Table 8 Significant Major Item Shortages* provide equipment inventories, shortfalls, and modernization requirements for the ARNG at the end of FY 2019. The item shortages of highest priority are not necessarily

driven by shortfall costs, but rather our ability as a force to maximize readiness across all of the varied missions mentioned above.

Supporting the ARNG's dual Federal and state roles, the Assault Breacher Vehicles, Capability Sets, and semitrailer shortages are high priorities.

C. Future Years Program (FY 2017–FY 2019)

The cumulative effect of sequestration will challenge the Army to consistently and predictably provide equipment to the RC. Currently, the ARNG is programmed to receive approximately $7.0B in FY 2017–FY 2019 in future years Army base funding (an overall increase from previous years); these figures include $2.23B in FY 2017, $2.39B in FY 2018, and $2.40B in FY 2019. These figures include the Army equipment procurement appropriation accounts and do not include pay and allowances or research and development and are subject to change with the FY 2017 President's Budget submission. The foremost risk to equipping is the continued equipping resources by Congress to ensure equipment modernization, recapitalization, reset, and repair requirements. Appropriations and obligations must be sustained to maintain required equipping readiness to assure victory in future conflicts.

1. FY 2019 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2017–FY 2019 major equipment inventories and requirements.

2. Anticipated New Equipment Procurements

a. Base Budget

Table 3 Service Procurement Program–Reserve (P-1R) provides the list of programmed ARNG equipment procurements in FY 2017–FY 2019.

b. National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NGREA funding has been used to successfully mitigate key ARNG shortfalls in equipment and modernization efforts. ARNG FY 2015 NGREA funding has allowed the investment of more than $284.7M in aviation, communications, domestic operations, Joint Force Headquarters, logistics, maintenance, and transportation systems that enhance HD and DSCA missions. The ARNG has also invested $130.3M of NGREA funding for the procurement of simulators and training systems that support both individual and collective training. These purchases support the ARNG's priority funding areas.

3. Anticipated Transfers from AC to RC

Table 5 Projected Equipment Transfer/Withdrawal Quantities provides a list of equipment the AC projects to cascade to the ARNG. The AC has received a large influx of newly procured equipment, especially for AC units rotating overseas. In addition, as forces are reduced, equipment requirements will also be reduced. It is anticipated that as force structure changes are implemented, new as well as excess AC equipment will allow the AC to transfer a portion of their older equipment to the ARNG to fill shortages and replace equipment that has been categorized as obsolete. The Army anticipates that it will cascade drawdown equipment to the ARNG through FY 2016.

4. Funding for New and Displaced Equipment Training

New Equipment Training (NET)/Displaced Equipment Training (DET) funding is dependent on the quantity of new equipment scheduled for fielding to the ARNG. In FY 2014, the ARNG received $37.4M in funding for NET/DET training events and activities. This amount is down from $67.7M in FY 2013. The ARNG must complete fielding of GCSS-Army by FY 2017. Any further reduction to ARNG NET funding levels will significantly increase risk in the ARNG's ability to support required NET during the fielding and implementation of GCSS-Army. GCSS-Army will be the prime system utilized to track delivery of new equipment and enable Chief, National Guard Bureau to comply with the required new equipment delivery certification requirement. The ARNG will also field costly advanced-technology equipment such as the NBC Reconnaissance Vehicle and Capability Sets in FY 2017 and FY 2018 respectively. These systems have significant NET associated costs and may impact our ability to conduct less costly NET/DET events.

5. ARNG Equipping Strategy

Ensuring the Soldiers of the ARNG continue to receive the necessary equipment to succeed in their mission is one of the ARNG top priorities. This means the Soldiers and units are always provided the required equipment in a timely fashion to execute assigned missions whether they are fighting fires in the western states as part of DSCA mission or preparing for mobilization as part of the operational reserve.

The Army Guard equipping strategy will continue to equip units in accordance with the ARNG G-3 Memo for Priorities and Target fill levels for ARNG equipment. ARNG G-Staff and NGB J-Staff will adhere to these priorities and target fill levels to the extent possible to support ongoing OCO, ensure a robust domestic response capability, meet ARFORGEN Aim Point equipping goals, and ensure interoperability with AC forces. ARFORGEN Aim Points are based upon the resourcing priorities and the Dynamic Army Resourcing Priorities List. Aim Points provide a means to track units at a prescribed state of readiness as they move through the ARFORGEN Force Pools and progressively increase readiness. They allow the leadership and force providers to make accurate, timely decisions, and to mitigate risk on manning, equipping and sourcing in accordance with Army priorities. Aim Points optimize the execution of ARFORGEN by synchronizing manning and equipping capabilities with training at specific points across the force pools.

6. Equipment Shortages and Modernization Shortfalls at the End of FY 2019

While modernization levels overall are good, and within one percent of AC levels, there are areas of concern. The H-60 Mission Design Series remains a significant concern; Blackhawk quantity requirements are nearly met, but modernization continues to lag that of the AC. Recent budget cuts will reduce the pace of transfers from the AC, further slowing our modernization rate. Equipment shortfalls include the Chemical/Biological Protective Shelter (CBPS) and general engineering equipment consisting of firefighting support and construction equipment.

The equipment items in each of the following Portfolios are not an all-inclusive ARNG equipment shortage list but are groupings of those shortages most critical to the ARNG for FY 2016. Such systems fulfill the Army's combat, combat support, and combat service support missions. Portfolio narratives are provided below.

a. Maneuver Portfolio

The Maneuver (Ground) Portfolio contains families of combat systems including Stryker and Bradley Fighting Vehicles, Abrams Tanks, and HERCULES Recovery Vehicles. ARNG Armored and Stryker BCTs have an FY 2017 projected rate of fill of 100 percent of authorized portfolio vehicles. While HERCULES and the most modern tank and Bradley variants are planned for full modernization, the bulk of the ARNG tank and Bradley fleet is planned to receive only limited engineering change proposal or field modernization upgrades. ARNG leaders are concerned this may lead to training, sustainment, and interoperability challenges.

b. Soldier Portfolio

The Soldier Portfolio includes individual and crew-served weapons, night vision, thermal weapons sights, mortars, Improved Target Acquisition Systems (ITAS), Common Remotely Operated Weapon Stations (CROWS), robotics, and other weapon support items. This portfolio enables Soldiers to gain and maintain overmatch against current and potential adversaries. Portfolio priorities include reducing the Soldier load to improve performance and overmatch capabilities. Full funding is planned to fill remaining shortages and continue to modernize the Soldier Portfolio systems. EOH remains strong and healthy with emphasis on modernization and correction of The Army Authorization Document System documentation.

c. Air and Missile Defense Portfolio

Air and Missile Defense (AMD) will provide the Army and combatant commanders with a flexible, adaptive, and integrated AMD force capable of enabling defeat of full range of aerial threat across Unified Land Operations.

Today, ARNG AMD, Ground-based Midcourse Defense (GMD), and Space units support the NCR's Integrated Air Defense System, which defends our Nation's capital, and GMD systems deployed in Alaska, Colorado, and California to deter and defeat intercontinental ballistic missile attacks on our homeland. Both AC and ARNG AMD units are called regularly to protect designated special security events such as Olympic Games or highly publicized political summits hosted in the United States. Acquisition of new tactical systems and modernization of currently fielded assets continues to improve and integrate AMD systems into the Joint Ballistic Missile Defense System architecture.

d. Aviation Portfolio

The Aviation Portfolio includes all ARNG fixed-wing, rotary-wing, unmanned aircraft systems (UAS), aviation Training Aids, Devices, Simulators, and Simulations (TADSS), and aviation ground support equipment (AGSE). CH-47D modernization to CH-47F is fully funded and should complete, via transfers, by FY 2018. Army UH-60A divestment is scheduled for FY 2025 with UH-60M (Utility)/HH-60M (Medical Evacuation) buyout forecast for FY 2028. UH-60V production is currently scheduled to begin in 2018 with the first being delivered to the ARNG in 2019. Subject to the National Defense Authorization Act for FY 2016 and recommendations from the National Commission on the Future of the Army, the ARNG AH-64D fleet will be Block II-pure in FY 2017. Common Aviation Tool Sets are being fielded to the ARNG and the rest of the army to modernize existing maintenance equipment and fill shortages. The ARNG is being fielded the Shadow V2 upgrades from FY 2015–FY 2019 to increase UAS performance

and capabilities. The Aviation Combined Arms Tactical Trainer (AVCATT) will require UH-60V, Manned/Unmanned-Teaming (MUM-T), and UH-72A upgrades as those programs are modernized.

e. Fires (Indirect) Portfolio

The Fires (Indirect) Portfolio consists of all fire support and related systems. Firing platforms (cannons/howitzers/rockets) will be fully fielded per the BCT 2020 construct with modernization efforts continuing into the next decade (on par with the AC). Targeting device fielding and modernization continues to lag AC but will improve during this period as new systems begin or complete fielding and as force structure changes permit the lateral transfer of items from inactivating or converting structure. The key readiness challenge for this portfolio remains sensors, specifically the legacy Firefinder radars. Q-36s are fully fielded and will modernize fully by FY 2016; Q-37s should reach full fielding and modernization as the Q-53 achieves full materiel release and begins fielding. ARNG formations plan to begin receiving Q-53s in FY 2017 with fielding continuing into FY 2021.

f. Mission Command Portfolio

The Mission Command Portfolio consists of the Army digital command, control, communication, computer, and intelligence systems. Joint Capabilities Release–Blue Force Tracker (JCR-BFT) is the key situational awareness and command and control system, which links communication devices, sensors, vehicles, rotary-wing aircraft, and weapons platforms in a seamless digital network to provide a clear, continuous, and common picture of the battlefield. The JCR-BFT Tactical Operations Center system and a vehicular-mounted system are currently being fielded to the ARNG. This number is significantly lower than MTOE authorizations and is the Army's 70 to 80 percent solution to fielding the force with this system. We have experienced improvements in mission command modernization and readiness; however, we have concerns about future fielding due to budget reductions. Reductions in mission command may negatively affect the ARNG in procurement of WIN-T Increment 2 and Capability Set equipment. More importantly, this could affect ARNG operability and communication with other ARNG units and units in other components.

g. Nuclear, Biological, and Chemical (NBC) Force Protection Portfolio

The NBC Force Protection Portfolio consists of systems to support chemical, biological, radiological, and nuclear activities. The NBC Reconnaissance Vehicle will be fielded to Army Acquisition Objective (AAO) (77 of 77) by the end of FY 2016. The portfolio has a significant shortfall relative to the CBPS. The CBPS is a CDU item used for homeland response missions, which consists of two configurations, the M8 and M8E1. ARNG CBPS requirement is six M8 systems and 271 M8E1 systems; however, the AAO caps the ARNG M8E1 requirement at 211. The CBPS M8E1 system is tentatively set to start fielding 4th Quarter FY 2017 and be completed by FY 2019.

h. Intelligence and Electronic Warfare (IEW) Portfolio

The IEW Portfolio consists of systems to support military intelligence and electronic warfare activities. The Prophet is a ground-based tactical signals intelligence/electronic warfare system capable of searching and monitoring the radio frequency spectrum, performing signal intercept,

direction finding, and reporting operationally relevant information. Each system comprises one control vehicle and three sensors. There is a Prophet Spiral 1 shortfall. Cascade of systems is behind due to Prophet Enhanced systems being pushed to AC. The ARNG currently has 11 control vehicles and 29 sensors on-hand. The ARNG is tentatively scheduled to receive five systems (5 control vehicles and 15 sensors) in FY 2016. There is also a Trainer-funding issue (program manager has no funds to support Trainers for the three-week Displaced Equipment Training.), which is currently being staffed by HQDA. There is a Geospatial Workstation (GWS) shortfall. This system is replacing the Digital Topographical System. The problem is the recovery of the older systems and rebuilding them to GWS capability. Currently the ARNG has 67 percent (144 of 216) on-hand with 32 systems projected for FY 2016.

i. Mobility Portfolio

This portfolio provides the ARNG with a versatile mix of capabilities enabling Engineer formations to provide support throughout the range of military operations to include homeland response and domestic support to civil authorities. ARNG currently has 74 percent of the total Army Engineer force structure. This portfolio includes counter explosive hazard, construction, bridging, mobility, counter mobility, mines and munitions, engineer support systems, and protection-specific Remote and Autonomous Systems (RAS) ground systems. The portfolio strategy is to invest in a set of capabilities to assure mobility across the battle space. The near-term priority is to focus on science and technology investment on developing U.S. compliant Family of Scatterable Mines and modernizing route clearance vehicles. The mid-term priority shifts to fielding tactical bridging, U.S. compliant munitions, and modernization of armored blade capability. The Family of Boats and Motors are currently under contract with fielding tentatively scheduled for FY 2018–FY 2022.

j. Combat Service Support (CSS) Sustainment Portfolio

The CSS Sustainment Portfolio consists of medical, fuel, water, maintenance, and field feeding equipment. The Sustainment Portfolio equipment systems are not high-cost items, and the ARNG has improved both its equipment on-hand levels and equipment modernization levels utilizing NGREA funding. The Sustainment Portfolio equipment is critical to both combat and domestic missions. The modernized Assault Kitchen (AK) replaces the current legacy company-level field kitchens. The AK is a highly mobile field-feeding platform that effectively meets the nutritional requirements of the forward deployed troops and the operational and domestic mission requirements while reducing the field logistical footprint. Army and NGREA funds have significantly increased ARNG AK assets and modernization levels.

k. CSS Transportation Portfolio

The CSS Transportation Portfolio consists of Light Tactical Vehicles, Medium Tactical Vehicles (MTV), Heavy Tactical Vehicles (HTV), Mine Resistant Ambush Protected (MRAP) Vehicles and Tactical Cargo Trailers. Army and NGREA funds have significantly increased ARNG transportation assets and modernization levels. The Army’s future Tactical Wheeled Vehicle (TWV) strategy is to sustain and recapitalize most families of vehicles through FY 2016.

HMMWVs are critical command and control and transportation assets during domestic operations. The HMMWV fleet consists of 53 percent up-armored HMMWVs, which is the most modern HMMWV in the Army. Ground ambulances are critical assets to the ARNG’s Federal

and state missions. The ARNG is purchasing 503 HMMWV Ground Ambulances with FY 2010 NGREA funding, and 106 HMMWV Ground Ambulances with FY 2015 NGREA funding. NGREA funding combined with directed Congressional funding since FY 2013 will result in the ARNG achieving 100 percent of its ambulance requirement and a 60 percent modernized ambulance fleet. Modernizing the ambulance fleet remains a high priority for the ARNG. The ARNG's MTV fleet is at 100 percent fill with a 64 percent modernization level of the Army's most modern up-armored Family of Medium Tactical Vehicles (FMTV). NGREA funding was a significant factor in the ARNG's unprecedented MTV modernization. The first generation FMTVs are approaching 16 years of service life. The Army has a key Decision Point in FY 2016 to implement a legacy FMTV recapitalization or replacement strategy. Adequate funding beyond FY 2016 will be critical to ensure the ARNG's MTV maintain adequate modernization levels.

The Army and the ARNG have significant 34-ton and 25-ton Semitrailer shortfalls. Although the Army is exploring multiple solutions including commercial off-the-shelf options, the Army-wide 25-ton and 34-ton Semitrailer shortfall has not been resolved. The Palletized Load System (PLS) is in sustainment, and no new procurement is planned. The new PLS Recapitalization Contract allows the ARNG the ability to modernize existing PLS assets with upgraded operational and protection capabilities.

D. Summary

The ARNG Men and Women have defended our Nation throughout its history. Our Soldiers serve in over 2,600 communities across the United States and Territories. The previous 14 years of war have highlighted the need for a total Army force including an operational ARNG. Our Soldier's collective strength, leadership, and courage significantly helped the Nation prevail through the challenges of the wars in both Iraq and Afghanistan. With Congressional funding, our equipment readiness and modernization is at unprecedented high levels. As the Army transitions from war to an Expeditionary Force; the transition should include a commitment to an operational ARNG and modernizing our vital equipment assets. Specifically the ARNG will maintain interoperability with the uninterrupted fielding of Capability Sets, M1 Abrams, M2 Bradley Fighting Vehicles, and Aviation assets.

Through these efforts, the ARNG will continue to provide the same trained and equipped forces to respond to global events and address future threats and opportunities.

ARNG

Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Air Defense							
Center Communications Operations: AN/TSQ-253(V)5	C17156	$12,000,000	3	3	3	3	6
Center Communications Operations	C18033	$3,748,800	56	59	59	59	52
Computer: Tactical AN/GYQ-88	C77755	$68,500	124	124	124	124	114
Center Communications Operations: AN/TSQ-253(4)	C77942	$1,683,868	1	1	1	1	1
Center Communications Operations: AN/TSQ-253(V)3	C78135	$5,832,100	2	3	3	3	4
Center Communications Operations: AN/TSQ-253(V)2	C78192	$6,981,600	2	4	4	4	5
Command System: Tactical	C91673	$2,000,000	33	33	33	33	56
Fire Unit Vehicle-mtd: Avenger	F57713	$1,090,277	252	252	252	252	252
Radar Set: Sentinel AN/MPQ-64	G92997	$4,176,000	35	35	35	35	0
Aircraft							
Aerial Scout Helicopter: OH-58D	A21633	$11,586,206	27	27	27	27	0
Airplane Cargo Transport: C-12D	A29812	$1,967,301	1	1	1	1	0
Airplane Cargo Transport: C-12F *	A30062	$3,068,422	0	0	0	0	48
CH-47F Improved Cargo Helicopter *	C15172	$34,035,255	94	94	94	94	120
Helicopter Cargo Transport: CH-47D *	H30517	$29,682,872	79	79	79	79	48
Helicopter Light Utility (LUH) UH-72A *	H31329	$7,667,855	192	192	192	192	192
Helicopter Utility: UH-60L *	H32361	$16,967,644	351	391	431	455	528
Helicopter Utility: UH-60M *	H32429	$17,044,052	88	105	110	112	258
Helicopter Attack: AH-64D	H48918	$18,389,000	173	173	173	173	0
Helicopter Utility: UH-60A *	K32293	$16,967,644	292	292	292	292	0
Tactical Unmanned Aerial Vehicles System: Shadow	T09343	$32,940,000	0	0	0	0	26
HH-60L: MEDEVAC Helicopter *	U84291	$16,967,644	14	14	14	14	8
Survival System, Aircraft Personnel	BB8056	n/d	224	224	224	224	0
Helicopter Internal Cargo Handling System (HICHS) CH-47	H31079	$482,131	28	28	28	28	42
Forced Entry and Rescue Equipment Set: Aircraft Crash *	H88468	n/d	42	42	42	42	147
Tool Kit: Aircraft Crash Rescue *	L27293	$707	258	258	258	258	315
Launcher Rocket Aircraft: 2.75-inch 19-tube M261	L45131	$7,160	380	380	380	380	0
Launcher Rocket Aircraft: 2.75-inch 7-tube M260	L45199	$7,160	55	55	55	55	0
Peculiar Ground Support Equipment: Deployment Support Kit	P05012	$66,950	86	86	86	86	0
Survival Kit Aircraft: Basic 4-Person	S72693	$1,277	806	806	806	806	1,127
Survival Kit Aircraft: (2-Man) Aircraft Modular Survival System (AMSS)	S72943	$977	225	225	225	225	240
Tester: Pitot and Static Systems TS-4463/P *	T03597	$31,763	122	122	122	122	164
Sling Cargo Aerial Delivery: 500-lb Capacity Type A7A *	T76903	$56	191	191	191	191	138
Sling Cargo Aerial Transport: w/Multiple Leg Sling	T80571	$829	4	4	4	4	0
STABO Extraction Harness System	U16457	$573	0	0	0	0	24

ARNG

Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Battle Command (Command and Control)							
Battle Command Common Services (BCCS) CPOF Stack AN/TYQ-146	B73507	$141,644	3	3	3	3	0
Computer Set: Digital AN/UYK-128(V)1	C05069	$15,954	783	783	783	783	596
Computer Set: Digital AN/GYK-62B *	C13866	$16,530	821	821	821	821	837
Computer System: Digital AN/UYQ-90(V)2 *	C18278	$18,932	7,848	7,848	7,848	7,848	8,423
Computer Set: AN/UYK-128(V)3 *	C18378	$31,172	16,200	16,200	16,200	16,200	20,607
Computer System: Digital AN/GYK-61 *	C18448	$69,488	1,330	1,330	1,330	1,330	1,269
Computer System: Digital AN/PYQ-12	C18641	$64,000	448	448	448	448	456
Computer System: Digital AN/PYQ-16	C18891	$14,396	204	204	204	204	153
Computer System: Digital AN/PYQ-13 (GCCS-A)	C27588	$3,497	196	196	196	196	192
Computer System: Digital *	C27963	$19,737	4,230	5,455	6,277	7,727	4,636
Command System Tactical *	C40996	$1,011,652	258	258	258	258	201
Command and Control System: AN/GYQ-97A	C56327	$65,000	18	18	18	18	17
Command System Tactical: AN/TYQ-155 (V)1 *	C61290	$103,558	405	405	405	405	354
Command Center System: AN/TSQ-243	C61665	$117,642	538	538	538	538	491
Communication Subsystem: AN/TSQ-259 *	C88821	$105,088	482	482	482	482	378
Computer Set: Digital FBCB2	FJ1007	n/d	281	281	281	281	0
Computer Set: AN/UYK-128(V)2	FJ1013	n/d	6	6	6	6	0
Generator Set: DED 10kW 50/60Hz Skid-mtd	G07461	$25,533	201	876	1,385	1,606	1,599
Generator Set: DED 5kW 60Hz Skid-mtd *	G11966	$19,177	1,975	1,975	1,975	1,975	278
Generator Set: DED 60kW 50/60Hz Skid-mtd *	G12034	$34,578	168	168	168	168	2
Generator Set: DED 15kW 50/60Hz Skid-mtd *	G12170	$23,724	235	235	235	235	13
Generator Set: DED TM 60kW 400Hz PU-806 Chassis	G17460	$43,751	11	11	11	11	2
Generator Set: DED 60kW 400Hz Skid-mtd *	G18052	$34,578	8	8	8	8	17
Generator Set: DED 3kW 60Hz Skid-mtd *	G18358	$12,304	6,481	6,481	6,481	6,481	6,009
Generator Set: DED Trailer-mtd (TM) PU-803 *	G35851	$41,800	350	350	350	350	25
Generator Set: DED TM PU-804	G35919	$45,636	1	1	1	1	0
Generator Set: DED 28V DC MEP-501A *	G36169	$25,135	57	57	57	57	27
Generator Set: DED 60Hz AC MEP-531A *	G36237	$12,304	2,177	2,177	2,177	2,177	1,858
Generator Set: DED TM 10kW 60Hz *	G42170	$19,177	1,477	1,477	1,477	1,477	85
Generator Set: DED TM 5kW 60Hz *	G42238	$25,135	1,117	1,117	1,117	1,117	725
Generator Set: DED 5kW 50/60Hz Skid-mtd	G42488	$19,177	110	110	110	110	973
Generator Set: DED 15kW 50/60Hz Skid-mtd	G49966	$23,724	5	5	5	5	182
Generator Set: DED 10kW 400Hz mtd on M116A2 PU-799 *	G53403	$33,519	26	26	26	26	9
Generator Set: DED TM PU-802 *	G53778	$32,187	1,235	1,235	1,235	1,235	52
Generator Set: DED 60kW 400Hz Skid-mtd	G62960	$34,578	3	3	3	3	6
Generator Set: DED 60kW 50/60Hz Skid-mtd	G63256	$34,578	3	3	3	3	158
Generator Set: DED 30kW 50/60Hz Skid-mtd *	G74575	$29,340	41	41	41	41	24
Generator Set: DED 30kW 400Hz Skid-mtd	G74643	$28,250	1	1	1	1	0
Generator Set: DED 10kW 60Hz Skid-mtd *	G74711	$25,533	1,733	1,733	1,733	1,733	530
Generator Set: DED 10kW 400Hz Skid-mtd *	G74779	$25,533	88	88	88	88	42
Generator Set: DED 10kW 400Hz Skid-mtd	G75018	$25,533	10	10	10	10	39

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Generator Set: DED 30kW 50/60Hz Skid-mtd	G75200	$29,340	0	0	0	0	2
Generator Set: DED TM 60kW 50/60Hz PU-805 Chassis *	G78306	$47,007	178	178	178	178	0
Generator Set: DED TM 15kW 60Hz *	G78374	$38,518	132	132	132	132	0
LTT Trailer-mtd: PU-2001 5kW 50/60Hz	L26934	$25,135	162	8,348	13,692	19,025	399
LTT Trailer-mtd: PP-3001 5kW 50/60Hz	L27002	$19,177	1	1	1	13	14
LTT Trailer-mtd: PU-2002 10kW 50/60Hz	L84622	$19,177	173	173	173	266	1,366
LTT Trailer-mtd: PU-2003 15kW 50/60Hz	L84690	$38,518	18	18	18	18	118
Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-35 *	P28083	$19,177	92	92	92	92	0
Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-36	P28151	$49,977	2	2	2	2	0
Power Supply: PP-6224/U *	P40750	$4,401	3,366	4,806	4,806	4,806	9,610
Power Plant: Electric TM 30kW 50/60Hz AN/MJQ-40 *	P42126	$47,007	95	95	95	95	18
Power Plant: Electric TM 60kW 50/60Hz AN/MJQ-41 *	P42194	$47,007	58	58	58	58	17
Power Plant: Diesel TM 10kW 60Hz AN/NJQ-37 *	P42262	$53,929	132	132	132	132	59
Power Plant: Utility (Medium) *	P63394	$120,000	181	181	181	181	144
Power Plant: Utility (Medium) *	P63462	$120,000	1,692	1,692	1,692	1,692	1,291
Power Plant: Electric DED TM	P63530	$28,000	176	176	176	176	0
Trailer-mtd: PP-3102 10kW 50/60Hz M200A1	T39849	$72,145	24	24	24	36	84
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	$47,007	15	15	15	23	65
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	$41,800	49	49	49	81	241
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	$44,157	153	153	153	249	1,165
Trailer-mtd: PP-3003 15kW 50/60Hz	T49579	$28,000	56	56	56	84	181
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	$47,007	21	21	21	23	53
Trailer-mtd: PU-2113 60kW 400Hz M200A1	T93368	$43,751	2	2	2	2	15
Battlespace Awareness							
Detecting System Countermeasures: AN/MLQ-40(V)4	D04182	$1,997,000	29	29	29	29	78
Data Analysis Central: AN/MSW-24	D77801	$1,369,000	11	11	11	11	26
Battle Command Transport Networks							
Battalion Command Post (Switching Group): OM-XXX *	B67234	$250,000	479	479	479	479	420
Communication Subsystem: AN/USQ-165	C05001	$35,650	7	7	7	7	75
Central Office: Telephone Automatic AN/TTC-56(V)3	C20617	$4,081,375	10	10	10	10	16
Frequency Hopping Multiplexer: TD-1456VRC	F99520	$88,007	739	739	739	739	935
Radio Set: AN/PRC-148	FA100W	n/d	2,551	2,551	2,551	2,551	0
Radio Terminal Set	FA9513	n/d	6	6	6	6	0
Joint Node Network (JNN) Central Office Telephone Auto *	J05001	$2,472,271	150	150	150	150	145
MBITR: Urban Version *	M18029	$7,700	1,247	1,247	1,247	1,247	2,297
MBITR: Maritime Version	M27045	$7,700	219	219	219	219	196
Net Control Station: AN/TSQ-158	N04580	$306,082	4	4	4	4	10
Radio Set: AN/VSQ-2D(V)1	P49587	$50,250	219	219	219	219	934
Radio Set: AN/VSQ-2D(V)2	P99724	$50,250	32	32	32	32	21
Radio Test Set: AN/GRM-122 *	R36178	$108,000	468	468	468	468	440
Radio Set: AN/VRC-89F(C) *	R44999	$97,565	3,761	3,761	3,761	3,761	4,807
Radio Set: AN/VRC-92F(C) *	R45543	$97,565	13,350	13,350	13,350	13,350	12,880
Handheld Type 1 Radio *	R55336	$8,473	11,781	11,781	11,781	11,781	420

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Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Radio Set: AN/VRC-87F(C) *	R67296	$97,565	655	655	655	655	640
Radio Set: AN/VRC-88F(C) *	R67330	$97,565	1,212	1,212	1,212	1,212	1,125
Radio Set: AN/VRC-90F(C) *	R68044	$97,565	43,629	43,629	43,629	43,629	48,588
Radio Set: AN/VRC-91F(C) *	R68146	$97,565	9,031	9,031	9,031	9,031	10,144
Radio Set: AN/VSQ-2D(V)4	R78005	$81,374	2	2	2	2	2
Radio Set: AN/PRC-119F(C) *	R83141	$97,565	7,738	7,738	7,738	7,738	8,649
Radio Terminal: LOS Multi-channel AN/TRC-190C(V)1 *	R90451	$2,472,271	372	372	372	372	362
Radio Terminal: LOS Multi-channel AN/TRC-190C(V)3 *	R90587	$2,472,271	202	202	202	202	189
Radio Set: Grid Reference AN/GRC-229D	R91580	$54,158	0	0	0	0	27
Teleconference System: AN/TYQ-122 *	T43146	$2,472,271	162	162	162	162	268
Airborne Maritime Fixed - Maritime Fixed (AMF-MF)	Z603FD	n/d	43	141	243	345	0
Combat Mobility							
Assault Breacher Vehicle (ABV)	A05001	$4,936,750	12	12	12	12	18
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	$1,156,605	157	157	157	157	98
SOF Demolition Kit: M303	S93791	$31,671	176	176	176	176	150
Tool Kit: Urban Operations	T30195	$77,049	298	316	376	443	734
Urban Operations: Platoon Kit	U88092	$175,445	115	115	134	146	464
Field Logistics							
Fuel System Supply Point (FSSP) Type-3 120K	F04898	$1,320,650	48	48	48	48	37
Advanced Aviation Forward Area Refueling Sys (AAFARS) *	F42611	$454,000	106	106	106	106	117
Forward Area Water Point Supply System (FAW SS) *	F42612	$151,958	234	234	234	234	46
Hydraulic System Test and Repair Unit (MX3)	H05002	$86,547	186	191	196	204	242
Multi-temperature Refrigerate Container System (MTRCS)	M30688	$141,027	265	265	265	265	350
Petroleum Quality Analysis System (PQAS)	P25493	$1,598,846	1	1	1	1	1
Petroleum Quality Analysis System	P25743	$1,513,000	9	10	12	14	17
Rough Terrain Container Handler: Kalmar RT240 *	R16611	$868,103	29	29	29	29	26
Tool Outfit Hydraulic System: Test and Repair 3/4-ton TM	T30377	$86,547	46	46	46	46	6
LHS-compatible 2K-gal Water Tank-Rack (HIPPO) *	T32629	$151,958	466	528	595	630	1,113
Truck Lift Fork: DED 6000-lb Variable Reach RT Ammo-hdlg	T48944	$72,370	154	154	154	154	0
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	$98,681	130	130	130	130	392
Truck Lift Fork: Variable Reach Rough Terrain *	T73347	$158,836	657	657	657	657	220
Tank Fabric Collapsible: Water 3000-gal	V15018	$1,762	0	0	0	0	25
Tank Unit Liquid Dispensing Trailer Mounting *	V19950	$2,000	381	381	381	381	518
Water Purifier: Lightweight *	W30051	$163,409	173	173	173	173	80
Water Purification: Reverse Osmosis 3K-gph TM *	W47225	$455,871	66	66	66	66	66
Water Storage/Distribution Set: 40K-gpd (Brigade) *	W55968	$121,746	6	6	6	6	33
Trailer Tank Water: 400-gal 1-1/2 ton *	W98825	$85,825	3,031	3,031	3,031	3,031	2,912
Truck Dolly: Steel Gen Utility Type w/Wheels wo/Pad	X43160	$632	103	103	103	103	88
Truck Hand Platform: Wood Nontilt Type	X47818	$369	107	107	107	107	25
Truck Lift Fork: DED 4000-lb Capacity OPT LH	X48863	$85,000	8	8	8	8	0
Truck Lift Fork: DED 6000-lb Capacity 130-in LH	X48876	$29,000	1	1	1	1	0
Truck Lift Fork: Gas 4000-lb	X51585	$85,000	2	2	2	2	0
Truck Lift Fork: DSL/Gas/LPG 6000-lb OPT LH	X51722	$31,545	8	8	8	8	0

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Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Truck Lift Fork: Gas PT 6000-lb	X51791	$14,411	3	3	3	3	0
Truck Lift Wheel: Mechanical Lift 2400-lb	X53298	$638	8	8	8	8	0
Test Station Electrical Electronic Equipment Containerized	Z01554	$8,551,000	0	0	0	0	1
Modular Fuel System (MFS): Pump Rack Module (PRM)	Z01595	$454,000	0	0	0	0	2
Force Protection							
Battlefield Anti-intrusion System: AN/PRS-9	B57077	$23,289	3,317	3,317	3,317	3,317	3,400
Chem-Bio Protective Shelter: M8 *	C07506	$1,635,636	5	5	5	5	119
Joint Chemical Agent Detector *	J00697	$5,996	17,754	17,754	17,754	17,754	17,222
Lighting Kit Motion Detector (LKMD): AN/GAR-2	L02015	$5,860	7,000	7,000	7,000	7,000	6,658
Mask Chem-Bio Joint Service General Purpose: M50	M12986	$400	25,517	25,517	25,517	25,517	238,736
Mask Chem-Bio: Combat Crewman: M51	M13236	$400	2,581	2,581	2,581	2,581	21,633
Chem-Bio Protective Shelter (CBPS)	Z01533	$1,635,636	0	0	8	15	152
General Engineering							
Hydraulic-Electric-Pneumatic-Petroleum Operated Equipment (HEPPOE)	H05004	$180,850	187	206	223	247	213
Maneuver Combat Vehicles							
Anti-Tank Guided Missile Vehicle (ATGM)	A83852	$5,696,258	9	9	9	9	9
Carrier 120mm Mortar: Self-propelled Armored	C10990	$511,343	123	123	123	123	96
Carrier Personnel Full Tracked: Armored (RISE)	C18234	$511,343	852	852	852	852	563
Command Variant Vehicle (CV)	C41314	$3,725,807	27	27	27	27	32
Fighting Vehicle: Full Tracked Infantry High Survivability (IFV)	F40375	$3,006,569	10	10	10	10	0
Fighting Vehicle: Full Tracked Cavalry High Survivability (CFV)	F60530	$3,006,569	23	23	23	23	0
Fighting Vehicle: Full Tracked Infantry (IFV) M2A3	F60564	$6,661,335	144	144	144	144	163
Fire Support Vehicle (FSV)	F86821	$3,694,633	13	13	13	13	13
Fighting Vehicle: Full Tracked Cavalry (CFV) M3A3	F90796	$6,661,335	58	58	58	58	45
Infantry Carrier Vehicle (ICV)	J22626	$3,704,123	146	146	146	146	130
Engineer Squad Vehicle (ESV)	J97621	$4,957,665	12	12	12	12	12
Medical Evacuation Vehicle (MEV) *	M30567	$3,785,691	23	23	23	23	18
Mortar Carrier Vehicle (MCV)	M53369	$3,935,629	36	36	36	36	36
Mobile Gun System (MGS)	M57720	$7,060,155	9	9	9	9	27
Operation Desert Storm (ODS) Situational Awareness (SA): M2A2	P19727	$3,006,569	451	451	451	451	367
ODS SA: M3A2	P19795	$3,006,569	154	154	154	154	138
Recovery Vehicle Full Tracked: Medium	R50681	$3,593,524	176	176	176	176	163
Recovery Vehicle Full Tracked: Heavy M88A2	R50885	$3,471,513	157	162	178	181	110
Reconnaissance Vehicle (RV)	R62673	$2,544,614	51	51	51	51	51
Tank Combat Full Tracked: 120mm Gun	T13168	$7,598,833	348	348	348	348	290
Tank Combat Full Tracked: 120mm Gun M1A2	T13305	$7,598,833	145	145	145	145	145
Maneuver Systems							
Drivers Enhancers: AN/VAS-5 *	D41659	$64,965	3,379	3,379	3,379	3,379	3,258
Surveillance System: Scout Long Range AN/TAS-8 *	S02976	$514,063	1,058	1,058	1,058	1,058	821
Target Acquisition System: TOW Improved ITAS M41	T24690	$725,000	664	664	664	664	708

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Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Medical Field Systems							
Medical Equipment Set (MES): Chemical Agent Patient Treatment *	M23673	$28,097	870	974	974	974	838
MES: Combat Medic *	U65480	$3,261	4,779	4,779	4,779	4,779	4,315
Soldier Systems							
Acoustic GDS: PILAR	A06293	$55,440	13	13	13	13	16
Acoustic Gunshot Detection System (GDS): PILAR MK-IIW Vehicle	A09441	$55,660	12	12	12	12	16
Basic Sight Assembly: Support Equipment (TOW 2)	B39044	$83,388	8	8	8	8	5
Sensor, Infrared	FA550P	n/d	54	54	54	54	0
Image Intensifier, Night Vision	FA5535	n/d	1	1	1	1	0
Night Vision Sight: AN/PVS-1	FA5575	n/d	7	7	7	7	0
Viewer Night Vision	FA5597	n/d	16	16	16	16	0
Helmet Unit: Integrated (IHADSS)	H35257	$15,270	681	681	681	681	8
Laser: Target Locator Module	L05003	$48,533	1,238	1,238	1,238	1,238	3,608
Marker: Laser System	M14868	$95,000	34	34	34	34	0
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-6	M74849	$43,128	1,331	1,331	1,331	1,331	2,448
Rope Assembly: Insertion and Extraction System	R22995	$1,352	209	209	209	209	448
Target Locator Module	T27471	$43,128	1,100	1,100	1,100	1,100	3,020
Unmanned Ground Vehicle Tracked: XM216	U31832	$289,504	0	0	0	0	1,061
Mounted Water Ration Heater (MWRH)	W52987	$567	164	164	164	164	0
Soldier Weapons							
Command Launch Unit: (Javelin) 13305405-119 *	C60750	$129,016	2,562	2,562	2,562	2,562	2,574
Launcher Grenade: M320 *	L03621	$3,139	701	701	701	701	558
Launcher Grenade: M320A1 *	L69080	$4,876	16,515	16,515	16,515	16,515	20,972
Machine Gun: Caliber .50 Heavy Fixed Turret Type	L91701	$15,259	1,618	1,618	1,618	1,618	1,714
Machine Gun: Caliber .50 HB Flexible (Ground & Vehicle)	L91975	$11,370	5,924	5,924	5,924	5,924	563
Machine Gun: 7.62mm Fixed	L92352	$7,808	958	958	958	958	870
Machine Gun: 5.56mm M249	M09009	$4,298	27,748	27,748	27,748	27,748	22,077
Machine Gun: 5.56mm M249 Light	M39263	$4,298	4,841	4,841	4,841	4,841	6,460
Machine Gun: Caliber .50	M39331	$15,000	8,711	8,711	8,711	8,711	11,874
Machine Gun Grenade: 40mm Mk19 Mod III	M92362	$17,085	8,599	8,599	8,599	8,599	7,694
Machine Gun: 7.62mm Fixed RH Feed	M92420	$7,808	994	994	994	994	818
Machine Gun: 7.62mm M240L	M92454	$14,404	2,913	2,913	2,913	2,913	2,978
Machine Gun: 7.62mm M240H	M92591	$11,597	1,509	1,509	1,509	1,509	1,792
Machine Gun: 7.62mm M240B	M92841	$14,404	12,416	12,416	12,416	12,416	10,021
Rifle Sniper Caliber .50: M107 *	R45351	$17,672	627	627	627	627	618
Rifle Sniper: M110 *	R45601	$14,216	521	521	521	521	512
Rifle 7.62mm	R95114	$138	61	61	61	61	0
Rifle 5.56mm: M4 *	R97234	$2,076	152,312	152,312	152,312	152,312	10,241
Strike							
Aiming Circle	A22496	$3,725	824	824	824	824	912
Radar Set: AN/TPQ-37(V)9	A41666	$8,500,000	14	14	14	14	3
Computer System, Digital: AN/GYK-56 (AFATDS)	C05018	$15,452	256	256	256	256	229

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Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Computer Set: AN/GYG-1(V)1	C17936	$65,973	58	58	58	58	4
Computer Set: AN/GYG-1(V)3	C18004	$155,600	35	35	35	35	0
Computer System, Digital: AN/PYG-2(V)1	C40495	$8,114	297	297	297	297	0
Computer System, Digital: AN/PYG-1	C53293	$14,978	496	496	496	496	542
Fire Support Team Vehicle: Bradley (BFIST)	F86571	$4,393,650	7	7	7	7	0
Howitzer Light Towed: M119	H57505	$1,400,000	192	192	192	192	0
Howitzer Medium Towed: M777	H57916	$3,571,429	127	127	127	127	210
Knight: Armored	K29708	$1,820,000	171	171	171	171	54
Howitzer, Light Towed, 105mm	K57392	$1,400,000	6	6	6	6	0
Meteorological Measuring Set - Profiler: AN/TMQ-52	M36361	$92,000	7	7	7	7	0
Plotting Board Indirect Fire: Azimuth	P07900	$441	357	357	357	357	0
Protractor Fan Range Deflection: AL 1-50000 meter Range	P81748	$873	0	0	0	0	104
Quadrant Fire Control: Gunners	Q03468	$737	535	535	535	535	443
Range Finder-Target Designator: Laser AN/PED-1	R60282	$294,366	793	793	793	793	841
Radar System: Counter Fire Target Acquisition Radar	Z00737	$8,500,000	8	17	27	41	43
Support Systems							
Container Handling	C27294	$42,249	864	864	864	864	1,259
Trailers							
Semitrailer Flatbed: Breakbulk/Container 22-1/2-ton *	S70027	$42,678	3,521	3,521	3,521	3,521	2,717
Semitrailer Flatbed: Breakbulk/Container 34-ton *	S70159	$70,787	3,717	3,717	3,717	3,717	3,480
Semitrailer Low Bed: 25-ton 4-wheel W/E *	S70517	$262,852	180	180	180	180	618
Semitrailer Low-bed: 50-ton 8-wheel	S70759	$24,811	3	3	3	3	0
Trucks							
Truck Utility TOW/ITAS Carrier w/IAP Armor-ready: M1167 *	T34840	$207,760	416	416	416	416	416
Truck Ambulance: 2-Litter Armored HMMWV	T38707	$397,000	9	9	9	9	1
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	$397,000	1,653	1,653	1,653	1,653	1,602
Truck Cargo: Heavy PLS Transporter 15-16.5 ton w/MHE *	T41067	$1,075,209	396	396	396	396	120
Truck Cargo: 5-ton wo/Winch *	T41515	$255,952	4,892	4,898	4,916	4,927	5,008
Truck Wrecker: Tactical HEMTT W/W *	T63093	$886,000	623	623	623	623	525
Truck Wrecker: M984A4	T63161	$886,000	363	363	363	363	377
Truck: Palletized Loading System (PLS)	T81874	$418,000	826	882	915	915	879
Truck Wrecker *	T94671	$690,707	509	509	510	511	678
Truck Cargo: 8X8 HEMTT w/LHS *	T96496	$367,575	762	762	762	762	543

1. "*" indicates a Critical Dual Use (CDU) equipment item

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Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Equip No.	Average Age	Remarks
Aircraft			
Aerial Scout Helicopter: OH-58D	A21633	19	
Helicopter Cargo Transport: CH-47D	H30517	4	
Helicopter Light Utility (LUH): UH-72A	H31329	5	
Helicopter Utility: UH-60L	H32361	24	
Helicopter Utility: UH-60M	H32429	9	
Helicopter Attack: AH-64D	H48918	12	
Helicopter Utility: UH-60A	K32293	33	
Airplane Cargo Transport: C-12D	A29812	32	
Airplane: Cargo Transport C-26	A46758	23	
Airplane: Cargo Transport	BA108Q	23	
Aviation			
Aviators Night Vision Imaging System: AN/AVS-6(V)1	A06352	13	
Battle Command and Control (C2)			
Computer System: Digital AN/TYQ-109(V)1	C27707	11	
Generator Set: DED Skid-mtd 5kW 60Hz	G11966	12	
Generator Set: DED TM PU-803	G35851	13	
Generator Set: DED: 60Hz AC MEP-531A	G36237	14	
Generator Set: DED TM 10kW 60Hz	G40744	26	
Generator Set: DED TM 10kW 60Hz	G42170	12	
Generator Set: DED TM 5kW 60Hz	G42238	11	
Generator Set: DED Trailer-mtd (TM) PU-802	G53778	10	
Generator Set: DED Skid-mtd 10kW 60Hz	G74711	11	
Generator Set: DED TM 60kW 50/60Hz PU805 Chassis	G78306	16	
Generator Set: DED TM 15kW 60Hz	G78374	11	
Power Plant: Electric TM 30kW 50/60Hz AN/MJQ-40	P42126	13	
Power Plant: Diesel TM 10kW 60Hz AN/NJQ-37	P42262	16	
Combat Mobility			
Boat Bridge Erection Inboard Engine: Shallow Draft	B25476	22	
Cradle: Improved Boat (IBC) M14	C33925	12	
Interior Bay Bridge Floating	K97376	13	
Launch M60 Series Tank Chassis Transpt: 40/60ft Bridge	L43664	42	
Loader Scoop Type: DED w/5 Cy Gp Bucket (CCE)	L76321	37	
Loader Scoop Type: DSL 2-1/2 cu yd w/Multi Purp Bucket	L76556	31	
Pallet: Bridge Adapter (BAP) M15	P78313	10	
Ramp Bay Bridge Floating	R10527	14	
Tractor Wheeled: DSL w/Excavator & Front Loader	T34437	27	
Transporter Common Bridge	T91308	14	
Tractor FT HS: Armored Combat Earthmover (ACE)	W76473	24	
Field Logistics			
Containerized Kitchen (CK)	C27633	8	
Truck Lift Fork: DED 50K lb Cont Hdlr Rough Terrain	T48941	33	
Truck Lift Fork: Variable Reach Rough Terrain	T73347	9	

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Table 2

Average Age of Equipment

Nomenclature	Equip No.	Average Age	Remarks
Water Purification: Reverse Osmosis 3Kgph TM	W47225	21	
General Engineering			
Crane: Whl-mounted Hydraulic 25-ton All Terrain AT422T	C36586	15	
Distributor Water Tank Type: 6K-gal Semitrailer-mtd (CCE)	D28318	31	
Excavator: Hydraulic (HYEX) Type I	E27792	16	
Excavator: Hydraulic (HYEX) Type II	E41791	14	
Compactor High Speed: Tamping Self-Propelled (CCE)	E61618	17	
Grader Road Motorized: DED Heavy (CCE)	G74783	31	
Fire Fighting Equipment Set: TM Multipurpose	H56391	31	
Scraper Elevating: SP 9-11 cu yd sectionalized	S30039	8	
Scraper Earth Moving: SP 14-18 cu yd (CCE)	S56246	30	
Truck Concrete: Mobile Mixer 8 cu yd (CCE)	T42725	36	
Tractor FT HS: Deployable Lt Engineer (DEUCE)	T76541	14	
Tractor FT LS: DSL Med DBP w/Buldoz w/Scarif Winch	W76816	37	
Tractor FT LS: DSL Med DBP w/Buldoz w/Scarif Ripper	W83529	31	
Tractor FT LS: DSL Hvy DBP w/Buldoz w/Ripper (CCE)	W88699	38	
Maneuver Combat Vehicles			
Carrier Personnel Full Tracked: Armored (RISE)	C18234	29	
Cavalry Fighting Vehicle: M3	C76335	31	
Fighting Vehicle: Full Track Infantry Hi Survivability (IFV)	F40375	22	
Fighting Vehicle: Full-Track Cavalry Hi Survivability (CFV)	F60530	26	
Fire Support Vehicle (FSV)	F86821	10	
Infantry Carrier Vehicle (ICV)	J22626	9	
Engineer Squad Vehicle (ESV)	J97621	9	
Mortar Carrier Vehicle (MCV)	M53369	12	
Mobile Gun System (MGS)	M57720	31	
Recovery Vehicle Full Tracked: Medium	R50681	38	
Tank Combat Full Tracked: 120mm Gun	T13168	23	
Strike			
Carrier Ammunition Tracked Vehicle (CATV)	C10908	25	
Carrier Cargo: Tracked 6-ton	D11049	46	
Howitzer Light Towed: M119	H57505	8	
Howitzer Medium Self Propelled	H57642	31	
Howitzer Medium Self Propelled: 155mm	K57667	45	
Support Systems			
Container Platform: Roll-In/Roll-Out	B83002	20	
Container Handling Unit (CHU)	C84862	10	
Trailers			
Semitrailer Tank: 5K-gal Bulk Haul Self-Load/Unload	S10059	17	
Semitrailer Flatbed: Breakbulk/Cont Transporter 22-1/2-ton	S70027	21	
Semitrailer Flatbed: Breakbulk/Container Transporter 34-ton	S70159	26	
Semitrailer Low-bed: 40-ton 6-wheel	S70594	25	
Semitrailer Low-bed: 70-ton Heavy Equip Transporter (HET)	S70859	16	
Semitrailer Tank: 5K-gal Fuel Dispensing Automotive	S73372	20	
Semitrailer Van: Repair Parts Storage 6-ton 4-wheel	S74832	42	

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Table 2

Average Age of Equipment

Nomenclature	Equip No.	Average Age	Remarks
Trailer Flatbed: 11-ton 4-wheel (HEMAT)	T45465	15	
Trailer: Palletized Loading 8X20	T93761	9	
Trailer Cargo: MTV W/Dropsides M1095	T95555	5	
Trailer Cargo: High Mobility 1-1/4-ton	T95924	8	
Trailer: Light Tactical 3/4-ton	T95992	6	
Trailer Flatbed: M1082 Cargo LMTV w/Dropsides	T96564	7	
Trucks			
Truck Utility: TOW Carrier Armored (HMMWV)	T05096	28	
Truck Utility: Heavy Variant (HMMWV) 10K GVW	T07679	17	
Truck Utility: ECV Armament Carrier M1151A1	T34704	7	
Truck Ambulance: 2 Litter Armored (HMMWV)	T38707	27	
Truck Ambulance: 4 Litter Armored (HMMWV)	T38844	26	
Truck Cargo: Tactical HEMTT w/Lt Crane W/W	T39518	28	
Truck Cargo: Tactical HEMTT w/Med Crane	T39586	22	
Truck Cargo: Tactical HEMTT w/Med Crane W/W	T39654	24	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton 10X10	T40999	12	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton w/MHE	T41067	20	
Truck Cargo: MTV W/W	T41135	10	
Truck Cargo: MTV w/MHE	T41203	10	
Truck Tank: Fuel Servicing 2500G HEMTT W/W	T58161	20	
Truck Tractor: Heavy Equipment Transporter (HET)	T59048	17	
Truck Cargo: Tactical HEMTT w/Lt Crane	T59278	27	
Truck Cargo: LMTV	T60081	10	
Truck Cargo: LMTV W/W	T60149	10	
Truck Tractor: Line Haul C/S 50000 GVW 6X4 M915	T61103	20	
Truck Tractor: MTV	T61239	11	
Truck Tractor: MTV W/W	T61307	10	
Truck Utility: Cargo/Troop Carrier (HMMWV)	T61494	25	
Truck Utility: Cargo/Troop Carrier W/W (HMMWV)	T61562	26	
Truck Cargo: MTV LWB	T61704	10	
Truck Cargo: MTV LWB W/W	T61772	12	
Truck Cargo: MTV	T61908	9	
Truck Wrecker: Tactical HEMTT W/W	T63093	17	
Truck Dump: MTV	T64911	19	
Truck Tank: Fuel Servicing 2500G HEMTT	T87243	18	
Truck Tractor: LET 6X6 66000 GVW W/W C/S	T91656	14	
Truck Utility: Armt Carrier Armored (HMMWV)	T92242	26	
Truck Utility: Armt Carrier Armored W/W (HMMWV)	T92310	26	
Truck Utility: ECV Up-Armored (HMMWV)	T92446	14	
Truck Van: LMTV	T93484	10	
Truck Wrecker: MTV W/W	T94709	10	
Truck Cargo: Tactical 8X8 HEMTT w/LHS	T96496	10	
Truck Dump: 20-ton DED 12 cu yd Cap (CCE)	X44403	23	

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Table 3

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Aircraft			
Utility Fixed-wing (F/W) Aircraft		$117,363,000	$17,200,000
RQ-11 (Raven)		2,095,000	2,136,000
UH-60 Blackhawk M Model (MYP)	$267,850,000	433,814,000	271,572,000
UH-60 Blackhawk A and L Models	46,173,000	75,133,000	83,540,000
Modification of Aircraft			
Utility/Cargo Airplane Modifications	5,053,000		
Network and Mission Plan	28,406,000	52,994,000	54,931,000
Communications, Navigation, and Surveillance	31,979,000	37,808,000	34,251,000
Global Air Traffic Management (GATM) Rollup	22,596,000	24,499,000	11,923,000
RQ-7 Unmanned Aerial Vehicle (UAV) Modifications	10,000,000	10,000,000	4,000,000
Support Equipment and Facilities			
Common Ground Equipment	20,067,000	25,023,000	19,572,000
Aircrew Integrated Systems	19,996,000	19,768,000	11,122,000
Air Traffic Control	12,064,000	46,810,000	32,794,000
Other Missiles			
Indirect Fire Protection Capability Increment 2-I			84,360,000
Multiple Launch Rocket System (MLRS) Reduced Range Practice Rockets (RRPR)	6,481,000	7,478,000	8,692,000
Modification of Missiles			
Avenger Modifications	1,199,000	44,107,000	24,168,000
High Mobility Artillery Rocket System (HIMARS) Modifications	1,491,000	5,310,000	5,752,000
Spares and Repair Parts (Missiles)	126,000	76,000	76,000
Weapons and Tracked Combat Vehicles (WTCV)			
Bradley Program (Modifications)			32,000,000
Howitzer, Medium Self-propelled Full-tracked 155mm M109A6 (Modifications)	26,393,000	26,770,000	24,276,000
Paladin Integrated Management (PIM)	187,722,000	264,965,000	262,639,000
Improved Recovery Vehicle (M88A2 Hercules)	23,977,000	17,983,000	
Joint Assault Bridge		42,645,000	80,382,000
Integrated Air Burst Weapon System Family		6,980,000	11,717,000
Precision Sniper Rifle		990,000	2,476,000
Compact Semi-Automatic Sniper System		2,846,000	3,389,000
Carbine	21,655,000	20,293,000	19,496,000
Handgun		3,330,000	6,201,000
M777 Howitzer Modifications	4,804,000	1,000,000	1,322,000
M4 Carbine Modifications	4,000,000	4,250,000	4,100,000
M2 .50 cal Machine Gun Modifications	17,731,000	6,000,000	16,927,000
M119 Howitzer Modifications	2,458,000	2,470,000	2,868,000
Tactical and Support Vehicles			
Tactical Trailers/Dolly Sets		3,980,000	3,722,000
Truck, Dump, 20-ton (CCE)			5,400,000

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2017	FY 2018	FY 2019
Family of Medium Tactical Vehicles (FMTV)	6,743,000	28,095,000	23,397,000
Firetrucks & Associated Firefighting Equipment	453,000	454,000	456,000
Family of Heavy Tactical Vehicles (FHTV)	35,348,000	2,459,000	4,000,000
Palletized Load System (PLS) Extended Service Program (ESP)	3,620,000		
Modification of In-service Equipment	61,346,000	38,455,000	43,019,000
Communications and Electronics Equipment			
Warfighter Information Network-Tactical (WIN-T) - Ground Forces Tactical Network	151,686,000	299,209,000	360,570,000
Signal Modernization Program	19,086,000		20,001,000
Joint Incident Site Communications Capability	5,346,000	5,621,000	3,925,000
Transportable Tactical Command Communications	4,720,000	5,900,000	11,420,000
SMART-T (Space)	2,300,000		
Handheld Manpack Small Form Fit (HMS)	59,000,000	59,000,000	59,000,000
Spider Apla Remote Control Unit	1,993,000		
Spider Family of Networked Munitions Increment			4,230,000
Tactical Communications and Protective System		4,395,000	
Unified Command Suite	12,761,000	13,503,000	15,520,000
Family of Medical Communications for Combat Casualty Care	7,859,000	4,490,000	7,049,000
Communications Security (COMSEC)	10,668,000	4,185,000	4,121,000
Distributed Common Ground System - Army (DCGS-A) (MIP)	49,711,000	50,520,000	62,200,000
Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) (MIP)	707,000	669,000	569,000
Close Access Target Reconnaissance (CATR)	1,667,000	2,694,000	2,998,000
Lightweight Counter Mortar Radar	27,468,000	5,200,000	3,334,000
Sentinel Modifications	7,521,000	6,648,000	10,723,000
Night Vision Devices	41,823,000	44,029,000	34,230,000
Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Range Finder (MLRF)	4,361,000	8,473,000	1,553,000
Indirect Fire Protection Family of Systems	15,993,000	9,283,000	3,470,000
Family of Weapon Sights (FWS)	11,191,000	20,692,000	33,071,000
Artillery Accuracy Equipment	2,753,000	1,074,000	
Joint Battle Command - Platform (JBC-P)	24,380,000	23,240,000	24,440,000
Joint Effects Targeting System (JETS)	20,370,000	22,841,000	20,712,000
Modification of In-service Equipment (Lightweight Laser Designator/Rangefinder [LLDR])	11,266,000	11,052,000	12,784,000
Counterfire Radars	192,309,000	100,113,000	49,450,000
Air & Missile Defense Planning and Control System (AMDPCS)	37,160,000	1,000,000	1,100,000
Network Management Initialization and Service	2,273,000	3,269,000	3,091,000
Maneuver Control System (MCS)	35,878,000	23,159,000	40,779,000
Global Combat Support System - Army (GCSS-A)	31,580,000	6,016,000	
Reconnaissance and Surveying Instrument Set	8,000,000	9,168,000	8,000,000
Reserve Component Automation System (RCAS)	14,351,000	15,772,000	16,937,000
Tactical Digital Media		1,000,000	1,328,000
Items Less Than $5M (Surveying Equipment)	682,000	1,000,000	677,000
Other Support Equipment			
Protective Systems	1,449,000	1,160,000	1,230,000
Family of Non-Lethal Equipment (FNLE)	2,413,000	4,129,000	5,808,000

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Table 3

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2017	FY 2018	FY 2019
Base Defense Systems (BDS)			2,023,000
CBRN Defense	9,949,000	8,843,000	9,770,000
Tactical Bridging	6,859,000		12,584,000
Tactical Bridge - Float Ribbon	12,725,000	9,951,000	5,000,000
Ground Standoff Minefield Detection System (GSTAMIDS)	3,000,000	7,500,000	7,400,000
Area Mine Detection System (AMDS)			9,644,000
Robotic Combat Support System (RCSS)	996,000	1,000,000	1,250,000
Robotics and Applique Systems		6,900,000	15,708,000
Explosive Ordnance Disposal (EOD) Equipment	1,993,000		
Remote Demolition Systems	4,912,000	1,993,000	
Items Less Than $5M (Countermine Equipment)		1,100,000	
Family of Boats and Motors	787,000	1,967,000	2,107,000
Heaters and Environmental Control Units (ECUs)	6,382,000	6,272,000	2,603,000
Ground Soldier System		9,050,000	9,580,000
Mobile Soldier Power		538,000	2,390,000
Field Feeding Equipment	4,479,000	4,017,000	3,180,000
Cargo Aerial Delivery & Personnel Parachute System	7,825,000	1,225,000	822,000
Family of Engineer Combat and Construction Sets	13,295,000	15,487,000	17,101,000
Quality Surveillance Equipment	2,271,000	4,194,000	2,632,000
Distribution Systems, Petroleum & Water	16,039,000	12,601,000	12,871,000
Water Purification Unit Reverse Osmosis Enhanced			3,000,000
Combat Support Medical	17,122,000	8,480,000	11,472,000
Mobile Maintenance Equipment Systems	16,677,000	13,731,000	19,639,000
Items Less Than $5M (Maintenance Equipment)	1,288,000	1,243,000	742,000
Grader, Road Motorized, Heavy, 6x4, (CCE)	584,000		
Scrapers, Earthmoving	11,802,000	8,016,000	
All Terrain Cranes	4,721,000	3,614,000	6,468,000
High Mobility Engineer Excavator (HMEE)	588,000	667,000	
Enhanced Rapid Airfield Construction Capability (ERACC)	1,125,000	1,322,000	
Construction Equipment ESP	7,890,000	12,587,000	12,289,000
Items Less Than $5M (Construction Equipment)	2,435,000	3,573,000	3,806,000
Generators and Associated Equipment	37,719,000	32,655,000	40,727,000
Family of Forklifts		4,420,000	4,508,000
Training Devices, Nonsystem	59,698,000	45,475,000	89,664,000
Close Combat Tactical Trainer	2,880,000	4,488,000	4,519,000
Aviation Combined Arms Tactical Trainer	9,654,000	9,558,000	10,438,000
Gaming Technology in Support of Army Training	4,645,000	3,563,000	5,045,000
Calibration Sets Equipment	2,304,000	2,444,000	4,645,000
Integrated Family of Test Equipment (IFTE)	10,546,000	9,205,000	8,759,000
Test Equipment Modernization (TEMOD)	2,394,000	3,726,000	4,053,000
Modification of In-service Equipment (OPA-3)	2,201,000	5,122,000	5,883,000
Total	**$1,978,241,000**	**$2,411,274,000**	**$2,390,518,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Aviation			
Forward-looking Infrared Radar (FLIR) Upgrade (A-Kit and B-Kit) (UH-60)	$24,000,000		
Civilian Communication Package A-Kit and B-Kit	16,754,000		
Internal Auxiliary Fuel Tank System (A-Kit and B-Kit) (UH-60)	7,454,387		
Display Unit Upgrade (Day Heads-Up Display)	5,028,864		
Blade Folding System (UH-72A)	1,548,855		
Settling Protectors (UH-72A)	690,434		
Aviation Ground Power Unit 2860-A (UH-72A)	95,504		
Water Purification Kit (UH-72A)	78,477		
Communications			
Cyber Training Range Configuration	10,520,000		
Network Access Control (GuardNet Security Modernization)	8,000,000		
Routers - (GuardNet Modernization)	6,741,000		
Routers - (Armory as a Docking Station)	4,508,000		
Virtual Machine End Devices (Virtual Desktop Environment)	1,400,000		
Telephony Enterprise Session Controllers Package (Enterprise Voice Over IP [VoIP] Telephony)	750,000		
Domestic Operations			
Radiological Back Pack Detection Monitoring System	8,775,000		
Medical Telemetry System (WMD-CST/HRF/CERFP)	4,389,000		
Lightweight Inflatable Decontamination System (LIDS)	4,275,000		
Engineering			
Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE)	20,125,000		
Portable Concrete Mixer	11,703,086		
Special Operations Forces Demolition Kit, M303	10,993,081		
Instrument Set, Reconnaissance & Surveying (ENFIRE AN/TKQ-5)	8,452,500		
Intelligence			
Sensitive Compartmented Information Facility (SCIF) Equipment Sets	6,300,000		
Logistics			
Assault Kitchen	4,200,000		
Multi-Temperature Refrigerated Container System (MTRCS)	2,520,000		
Training			
Deployable Force-on-Force Instrumented Range System (FLEXTRAIN)	59,492,714		
Call For Fire Trainer (CFFT)	12,369,000		
Mobile Distributed Learning Classroom	11,072,000		
Modular Small Arms Training System (8-Lane)	8,815,177		
Fixed and Mobile Distributed Learning Classroom Computers	3,240,000		

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
Training/Aviation			
Synthetic Flight Simulator (UH-72A)	19,700,000		
Transportable Blackhawk Operations Simulator (TBOS) (UH-60M)	15,600,000		
Non-rated Crew Member Manned Module (NCM3)	6,685,613		
Universal Mission Simulator	5,720,000		
Shadow Crew Trainer Upgrade	2,199,988		
Transportation			
Engineering Change Proposal (ECP) Freight/Tarps and Bows (FMTV)	803,319		
FY 2015 NGREA Equipment			
Aviation			
Forward Looking Infrared Radar (FLIR) (A-Kit and B-Kit)		$39,788,043	
Civilian Communications Package (A-Kit and B-Kit)		23,520,000	
Internal Auxiliary Fuel Tank System (A-Kit and B-Kit)		9,240,000	
Display Unit (Day Heads Up Display) Upgrade		5,170,000	
Blade Folding System		2,777,800	
Gimbaled Raven Upgrade		1,525,000	
Deployment Support Kit		1,152,000	
Water Purification Kit		414,807	
Aviation Ground Power Unit		95,540	
Communications			
Armory as a Docking Station		1,800,000	
Virtual Machine End Devices		880,000	
GuardNet Security Log Management		857,990	
Information Technology Training Center Classroom Modernization		282,900	
Information Technology Training Center Computing Infrastructure Modernization		100,000	
Domestic Operations			
Robotics Sensor Integration		11,400,000	
Radiological Detector, High-Resolution w/Mapping		7,930,000	
Chemical Detectors		2,737,128	
Instantaneous Bio-analyzer and Collector		2,337,000	
Gamma Spectrometer		2,077,000	
Radiac Set		1,974,000	
Detector Kit, Multi-Gas		1,926,940	
Survey Computers		351,750	
Joint Force Headquarters			
Sensitive Compartmented Information Facility (SCIF) Systems		8,000,000	
Technical Surveillance Countermeasures Equipment Set		1,800,000	
Logistics			
Assault Kitchen		4,200,000	
Maintenance			
Maintenance Support Device		2,156,000	
Training			
Virtual Convoy Operations Trainer (VCOT C3) upgrade		20,605,445	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
Transportable Blackhawk Operations Simulator		20,000,000	
Multipurpose Range Complex Target System Upgrade		20,000,000	
Synthetic Flight Simulator		18,000,000	
Containerized Range System (Modularized Small Arms Range)		12,256,138	
Operator Driver Simulator (ODS) Upgrade		11,003,278	
Mobile Distributed Learning Classroom		9,518,670	
Stryker RWS-TTT Crew Trainer Upgrades		8,266,544	
Mobile-Close Combat Tactical Trainer Upgrade		7,600,000	
Non-Rated Crew Member Manned Module		3,000,000	
Transportation			
Truck Cargo, Heavy Palletized Load System (PLS) Transporter RECAP		101,581,937	
Truck Ambulance, HMMWV		33,100,000	
Truck Utility, ECV TOW/ITAS Carrier, RECAP		15,574,090	
Total	**$315,000,000**	**$415,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

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Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature[1]	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019[2] Qty	Remarks
Air Defense					
Command System: Tactical	C91673	+6	+2		
Tool Kit: Electronic Maintenance (Sentinel)	T37867	+4			
Aircraft					
Small Unmanned Aircraft System (SUAS): Raven B (MIP)	S83835	+97			
Aviation					
Communication System: Tactical Terminal Control System (TTCS) *	C59125			+1	
Flaw Detector: Portable Eddy Current *	F75053	+2			
Mobile Tower System (MOTS)	M05009			+1	
Unit Maintenance Aerial Recovery Kit (UMARK) *	U87773	+2	+1		
Battle Command and Control					
Command System Tactical *	C40996	+57			
Computer Set: AN/UYK-128(V)3 *	C18378	+1,100			
Computer Set: Digital (JBC-P Log) AN/UYQ-90B(V)4	C05055	+59	+38		
Computer System: Digital *	C27963	+331			
Generator Set: DED 60kW 400Hz Skid-mtd *	G18052	+7			
Shelter: Nonexpd LTWR MP Rigid-wall S788 102Lx84Wx67H mtd HMMWV	S01563	+12			
Battlespace Awareness					
Data Analysis Central: AN/MSW-24	D77801	+1			
Battle Command Transport Networks					
Encryption-Decryption Equipment: KGV-72	E05008	+73			
Radio Set: AN/VRC-91F(C) *	R68146	+579			
Receiver Suite: AN/TSR-8 *	R30658	+11			
Combat Mobility					
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	+11			
Launcher Mine Clearing Line Charge Trailer Mounting (MICLIC)	L67342	+3			
Field Logistics					
Electronic Shop Shelter Mounted Avionics: AN/ASM-146 less power *	H01907	+6	+6		
Forward Repair System (FRS) *	F64544	+29			
Maintenance Support Device *	T92889	+160			
Test Set Aviators Night Vision Imaging System: TS-3895/UV *	T53471	+12	+1		
Test Set Transponder Set: AN/APM-305	V99436	+1	+3		
Trailer Tank Water: 400-gal 1-1/2 ton *	W98825	+123			
Force Protection					
Battlefield Anti-intrusion System: AN/PRS-9	B57077	+26			

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Projected Equipment Transfer/Withdrawal Quantities

Nomenclature[1]	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019[2] Qty	Remarks
Radiac Set: AN/PDR-75A *	R30925	+102			
General Engineering					
Tractor Full Tracked: Low Speed T-5 Type II w/Ripper	T05026	+1	+3		
Tractor Full Tracked High Speed: Deployable LT Engineer (Deuce) *	T76541	+4			
Maneuver Combat Vehicle					
Command Variant Vehicle (CV)	C41314	+5			
Maneuver Systems					
Fire Control System Mortar: M150	F55682	+16			
Mortar Quick Stow System: 120mm	H39473	+16			
Shop Equip: GM System Improved Contact Support Set AN/TSM-153	C84041	+1			
Medical Field Systems					
Analyzer Veterinary Clinical Chemistry (AVCC)	A05024	+2			
Computer Set: Digital AN/TYQ-106(V)1	C18345		+1		
Computer System: Digital AN/TYQ-105(V)1	C27503	+720			
Defibrillator Monitor Recorder: 120/230V 50/60Hz AC or DC *	D86072	+7			
Medical Filmless Imaging System	M30817	+2			
Soldier Weapons					
Shotgun: 12 Gage *	S40541	+33			
Strike					
Aiming Circle	A22496	+34			
Computer System, Digital: AN/PYG-1	C53293	+14			
Gun Laying and Positioning System (GLPS)	G97730	+6			
Support Systems					
Container Handling Unit (CHU) *	C84862	+43	+3		
Container Handling: Heavy Expanded Mobility Tactical Truck (HEMTT) *	C84930		+1		
Firing Device Demolition: Mk152 Mod 0	F60336	+47			
Man Transportable Robotic System (MTRS) Mk I:	M05002	+42			
Mk3 Mod0:	M86561	+1			
Trailers					
Chassis Trailer: Generator 2-1/2 ton 2wheel W/E	E02807	+2			
Semitrailer Van: Supply 12 ton 4-wheel W/E *	S75175	+4			
Trailer Bolster: General Purpose 4 ton 4-wheel W/E	W94536	+4			

1. "*" indicates a Critical Dual Use (CDU) equipment item

2. The Army continues to analyze the effects of end strength reductions and restructuring associated with sequestration. Consequently, Table 5 data for the projected equipment transfer and withdrawal estimates associated with FY 2019 are pending senior Army leader decisions.

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
Air Defense							
Radar Set: Sentinel AN/MPQ-64	G92997	+21	-1				
Aircraft							
CH-47F Improved Cargo Helicopter	C15172	+18	+33				
Helicopter Light Utility (LUH) UH-72A	H31329	+11	+49				
Helicopter Utility: UH-60L	H32361	+42	+37				
Helicopter: Attack AH-64D	H48918	+33	+18				
Tactical Unmanned Aerial Vehicle (Shadow)	T09343	+2	+3				
Aviation							
Aviators Night Vision Imaging Sys: AN/AVS-6(V)1	A06352	+12	+90				
Command System: Tactical AN/TSQ-221	C61597	+1	+1				
Hoist High Performance	H39331	+13	-162				
Power Unit Auxiliary: Aviation Multi-output GTED (AGPU)	P44627	+32	+40				
Radio Set: High Frequency AN/ARC-220 (V)1	R22436	+9	-8				
Tool Set: Aviation Foot Locker	T65997	+74	+25				
Battle Command and Control							
Computer System: Digital AN/UYQ-90(V)2	C18278	+537	+321				
Computer Set: AN/UYK-128(V)3	C18378	+2,019	+1,264				
Computer System: Digital AN/TYQ-105(V)1	C27503	+1,857	+169				
Computer System: Digital AN/TYQ-109(V)1	C27707	+18	+39				
Computer System: Digital AN/TYQ-109(V)2	C27775	+9	-53				
Generator Set Diesel Engine TM: PU-803	G35851	+2	-29				
Generator Set Diesel: 28v DC MEP-501A	G36169	+2	-2				
Generator Set: Trl-mtd 60kW 50/60Hz PU805 Chassis	G78306	+2	+30				
Battlespace Awareness							
Dig Topograph Sys: AN/TYQ-67(V)	D10281	+1	+2				
Battle Command Transport Networks							
Joint Node Network (JNN) Central Office Telephone	Z00562	+2	+140				

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Combat Mobility							
Bridge Heavy Dry: Supt (HDSB) 40m MLC96	B26007	+4	+12				
Field Logistics							
Forward Area Water Point Supply System: (FAW SS)	F42612	+98	+52				
Forward: Repair System (FRS)	F64544	+77	+86				
Electronic Shop Shelter-mtd Avionics: AN/ASM-146	H01907	+49	+1				
Shop Equip: Contact Maintenance Ord/Eng Truck Mounting	S25681	+77	+73				
Sanitation Center: Food	S33399	+2	-21				
Load Handling Sys: 2000gal Water Tank-rack (HIPPO)	T32629	+8	+84				
SATS Field Maintenance Module 2	T65562	+12	0				
Maintenance Support Device	T92889	+2	+1,371				
Test St: Radar TS-4530()/UPM	T99847	+17	-1				
Tank and Pump Unit Liquid Dispensing Truckmounting	V12141	+1	-90				
Maneuver Combat Vehicles							
Command Variant Veh: (CV)	C41314	+4	0				
Fighting Vehicle: Full Tracked Infantry (IFV) M2A3	F60564	+45	+27				
Fighting Vehicle: Full Tracked Cavalry (CFV) M3A3	F90796	+29	+8				
Drivers Enhancers: AN/VAS-5	D41659	+869	+141				
Surveillance System: Scout Long Range AN/TAS-8	S02976	+5	+218				
Target Acquisition System: TOW Improved ITAS M41	T24690	+217	0				
Medical Field Systems							
Medical Equipment Set Ground Ambulance	M26413	+1	+131				
Medical Equipment Set Tactical Combat Medical Care:	M30499	+4	-48				
MES Combat Medic:	U65480	+462	+140				
Soldier Systems							
Monocular Night Vision Device: AN/PVS-14	M79678	+407	+5,868				
Sight: Reflex Collimator	S60288	+8	-671				
Sight: Thermal AN/PAS-13B(V)1	S60356	+46	+1,590				
Medium Weapon Thermal Sight (MWTS): AN/PAS-13(V)2	S90535	+1,209	+2,128				
Soldier Weapons							
Machine Gun 5.56mm: M249	M09009	+70	-314				
Machine Gun Grenade 40mm: Mk19 Mod III	M92362	+12	-83				
Machine Gun: 7.62mm M240B	M92841	+3,826	+1,025				

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Pistol 9mm Automatic: M9	P98152	+292	-1,283				
Rifle 5.56mm: M4	R97234	+532	+3,589				
Strike							
Radar Set: AN/TPQ-37(V)9	A41666	+9	+1				
High Mobility Artillery Rocket System: HIMARS	H53326	+2	+12				
Radar Set: AN/TPQ-36(V)10	R14284	+10	+9				
Range Finder-target Designator: Laser AN/PED-1	R60282	+68	+150				
Support Systems							
Platform: Container Roll In/Roll Out	B83002	+4	+63				
Boat Landing Craft Inflatable: 7 Person	B84293	+103	+27				
Trailers							
Trailer Cargo: MTV w/Dropsides M1095	T95555	+48	+2,246				
Trailer Cargo: High Mobility 1-1/4 Ton	T95924	+9	-254				
Light Tactical Trailer: 3/4 Ton	T95992	+15	-163				
Trailer Flat Bed: M1082 Trlr Cargo LMTV w/Dropsides	T96564	+203	+401				
Trucks							
Truck Utility: Heavy Variant HMMWV 4x4 10000 GVW	T07679	+5	+638				
FY 2013 P-1R Equipment							
Aircraft							
RQ-11 (RAVEN)				$5,641,000	$8,000,000		
Helicopter, Light Utility (LUH)				151,991,000	248,300,000		
UH-60 Blackhawk M Model (MYP)				0	509,800,000		
Modification of Aircraft							
Utility/Cargo Airplane modifications				9,571,000	0		
Utility Helicopter modifications				53,506,000	53,300,000		
Network and Mission Plan				0	12,490,000		
Communications, Navigation, Surveillance				7,298,000	0		
Global Air Traffic Management (GATM) Rollup				3,391,000	0		
Missiles							
MLRS Reduced Range Practice Rockets (RRPR)				8,135,000	7,100,000		
Modification of Missiles							
MLRS Modifications				32,000	32,000		
High Mobility Artillery Rocket System (HIMARS) Modifications				2,492,000	3,300,000		
Weapons and Tracked Combat Vehicles (WTCV)							
Stryker Vehicle				118,683,000	94,300,000		
Fire Support Team (FIST) Vehicle (Modifications)				27,000,000	24,600,000		
Bradley Program (Modifications)				35,000,000	35,000,000		
Assault Breacher Vehicle				0	18,948,000		

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Machine Gun, Lightweight .50 cal				8,562,000	0		
Mortar Systems				2,000,000	2,000,000		
XM320 Grenade Launcher Module (GLM)				4,599,000	4,599,000		
Shotgun, Modular Accessory System (MASS)				2,217,000	2,217,000		
Common Remotely Operated Weapons Station				23,000,000	23,000,000		
Howitzer, Light Weight, 155mm, Towed				5,606,000	0		
M777 Howitzer Modifications				3,233,000	2,503,000		
M119 Howitzer Modifications				8,291,000	8,900,000		
Spares and Repair Parts (WTCV)				12,917,000	10,100,000		
Tactical and Support Vehicles							
Family of Medium Tactical Vehicles (FMTV)				139,542,000	136,000,000		
Family of Heavy Tactical Vehicles (FHTV)				15,707,000	13,200,000		
Heavy Expanded Mobile Tactical Truck (HEMTT) ESP				14,941,000	14,100,000		
Communications and Electronics Equipment							
Warfighter Information Network-Tactical (WIN-T) - Ground Forces Tactical Network				24,525,000	4,600,000		
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) (Space)				65,771,000	11,900,000		
Global Broadcast Service (GBS)				43,339,000	0		
Mod of In-service Equipment (Tactical Satellite)				21,181,000	19,200,000		
Joint Tactical Radio System				104,462,000	0		
Mid-tier Networking Vehicular Radio (MNVR)				12,933,000	0		
SPIDER Anti-personnel Landmine Alternative (APLA) Remote Control Unit				13,719,000	1,400,000		
Gunshot Detection System (GDS)				933,000	0		
Medical Communications for Combat Casualty Care (MC4)				4,602,000	4,602,000		
Telecommunications Security (TSEC) - Army Key Management System (AKMS)				4,510,000	0		
Information Systems Security Program (ISSP)				5,985,000	8,800,000		
Prophet Ground				6,900,000	6,900,000		
Distributed Common Ground System - Army (DCGS-A) (MIP)				1,097,000	1,097,000		
Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) (MIP)				637,000	637,000		
Lightweight Counter Mortar Radar				25,000,000	33,310,000		
Forward Area Air Defense (FAAD) GBS				7,980,000	0		
Sentinel modifications				14,381,000	16,300,000		
Sense Through the Wall (STTW) Sensor				2,881,000	0		
Night Vision Devices				39,633,000	30,100,000		
Night Vision, Thermal Weapon Sight				11,847,000	0		
Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Range Finder (MLRF)				5,000,000	5,000,000		
Green Laser Interdiction System (GLIS)				514,000	514,000		
Indirect Fire Protection Family of Systems				11,168,000	0		
Family of Weapon Sights (FWS)				0	5,054,000		
Profiler				4,394,000	4,394,000		

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Mod of In-service Equipment (Firefinder Radars)				3,075,000	9,271,000		
Modification of In-service Equipment (Lightweight Laser Designator/Rangefinder [LLDR])				6,076,000	27,300,000		
Mortar Fire Control System				18,751,000	14,200,000		
Counterfire Radars				105,059,000	103,500,000		
Fire Support Command & Control (C2) Family				23,448,000	23,200,000		
Battle Command Sustainment Support System (BCS3)				1,135,000	6,500,000		
Forward Area Air Defense (FAAD) C2				2,475,000	2,475,000		
Air & Missile Defense Planning and Control System (AMDPCS)				20,981,000	40,900,000		
Network Management Initialization and Service				18,880,000	13,451,000		
Maneuver Control System (MCS)				8,242,000	31,700,000		
Single Army Logistics Enterprise (SALE)				51,443,000	51,200,000	.	
Reconnaissance and Surveying Instrument Set				9,245,000	9,245,000		
Items Less Than $5M (Surveying Equipment)				1,109,000	1,483,000		
Other Support Equipment							
Family of Non-lethal Equipment (FNLE)				1,992,000	0		
Base Defense Systems (BDS)				1,510,000	17,900,000		
CBRN Soldier Protection				952,000	952,000		
Tactical Bridging				19,961,000	0		
Tactical Bridge, Float-Ribbon				4,143,000	0		
Explosive Ordnance Disposal (EOD) Equipment				2,511,000	0		
Items Less Than $5M (Countermine Equipment)				776,000	0		
Heaters and Environmental Control Units (ECUs)				1,863,000	1,863,000		
Field Feeding Equipment				9,976,000	7,500,000		
Cargo Aerial Delivery & Personnel Parachute System				29,854,000	22,100,000		
Family of Engineer Combat and Construction Sets				10,633,000	10,633,000		
Items Less Than $5M (Engineer Support)				3,633,000	3,388,000		
Distribution Systems, Petroleum & Water				19,355,000	19,300,000		
Combat Support Medical				5,610,000	4,700,000		
MEDEVAC Mission Equipment Package (MEP)				13,967,000	15,400,000		
Mobile Maintenance Equipment Systems				1,329,000	1,326,000		
Scrapers, Earthmoving				6,146,000	7,400,000		
Tractor, Full Tracked				16,081,000	18,100,000		
Plant, Asphalt Mixing				3,679,000	2,300,000		
High Mobility Engineer Excavator (HMEE)				29,042,000	26,300,000		
Construction Equipment ESP				2,097,000	2,097,000		
Items Less Than $5M (Construction Equipment)				4,445,000	354,000		
Generators and Associated Equipment				7,528,000	29,300,000		
Family of Forklifts				780,000	780,000		
Training Devices, Nonsystem				2,564,000	3,521,000		
Close Combat Tactical Trainer				6,500,000	8,500,000		
Aviation Combined Arms Tactical Trainer				3,341,000	3,640,000		
Gaming Technology in Support of Army Training				1,000,000	651,000		

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Calibration Sets Equipment				1,400,000	2,600,000		
Integrated Family of Test Equipment (IFTE)				22,937,000	22,700,000		
Test Equipment Modernization (TEMOD)				7,414,000	10,700,000		
Modification of In-service Equipment (OPA-3)				2,413,000	7,100,000		
FY 2013 NGREA Equipment							
Aviation							
Reduced Size Extended Range Fuel System (RSERFS) B-Kit (CH-47)						$14,498,348	$0
A-Kit Upgrade Forward Looking Infrared Radar (FLIR) (UH-60)						4,500,000	1,981,507
B-Kit Upgrade Forward Looking Infrared Radar (FLIR) (UH-60)						13,740,000	10,842,644
A-Kit Internal Auxiliary Fuel Tank System (UH-60)						900,000	5,183,752
B-Kit Internal Auxiliary Fuel Tank System (UH-60)						3,400,000	0
Micro-Flare Kit Internal Auxiliary Fuel Tank System (UH-60)						3,120,000	0
Security and Support (S&S) Retrofit Mission Equipment Package (MEP) (UH-72)						1,677,296	0
Engine Inlet Barrier Filter UH-72A						1,171,500	1,169,293
Blade Folding System						234,000	659,197
Civilian Communication Package A-KIT							1,927,006
Domestic Operations							
Chemical Biological Protective System M8E1						43,293,840	42,753,826
Dismounted Communication Strike Kit (Small)						19,477,168	19,477,168
Decontamination Trailer Mobile Mass C-130 Deployable (HRF/CERFP)						3,847,964	4,028,319
ALS Computer Subsystem Modernization						1,702,560	1,702,560
Engineering							
Hydraulic Excavator (HYEX)						5,183,603	5,177,218
Intelligence							
Sensitive Compartmented Information Facility (SCIF) Systems						9,000,000	9,000,000
Logistics							
Multi-Temperature Refrigerated Container System (MTRCS)						7,000,000	6,654,910
Assault Kitchens						2,575,000	4,933,620
Maintenance							
Maintenance Support Device						4,536,000	4,528,709
Hydraulic System Test and Repair Unit (HSTRU)						4,025,000	4,085,000
Training							
Virtual Convoy Operations Trainer (VCOT) C4						57,946,750	56,412,748
Individual Gunnery Trainer Brigade Combat Team Weapons Package Upgrade Sets						40,682,174	40,682,174
Close Combat Tactical Trainer - Dismounted Soldier System						14,500,000	14,500,000
Deployable Force-on-force Instrumented Range System (DFIRST 3.0) FLEXTRAIN System						12,189,549	24,379,098
Mission Command System						5,088,572	6,626,641
Tabletop Trainer (RWS-TT) (Stryker Remote Weapon System)						1,305,337	1,305,337
Training/Aviation							
Aviation Combined Arms Tactical Trainer (AVCATT) Module (LUH)						31,999,979	37,872,956
Synthetic Flight Simulator (UH-72A)						14,000,000	18,000,000
Transportable Blackhawk Operations Simulator (TBOS) UH-60M						10,000,000	0

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Maintenance Trainer (LUH) Virtual						4,090,361	4,800,000
Maintenance Trainer (LUH)						3,200,000	5,564,103
Universal Mission Simulator (Shadow Crew Trainer)						1,392,000	6,397,000
Transportation							
5-ton Wrecker (M1089A1P2)						52,463,322	52,133,018
HMMWV Ambulances Integration Efforts						45,000,000	44,988,000
Truck Tractor (M1088A1P2)						22,259,677	22,233,139
Engineering Change Proposal (ECP) FMTV/MTV/Freight						0	1,057
Total				**$1,612,098,000**	**$1,971,127,000**	**$460,000,000**	**$460,000,000**

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Table 7

Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature [1]	Reqd Item Equip No.	Substitute Item Nomenclature [1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Aircraft						
Helicopter Utility: UH-60L *	H32361	Helicopter Utility: UH-60A *	K32293	163	X	
Helicopter Utility: UH-60L *	H32361	HH-60L: MEDEVAC Helicopter *	U84291	14	X	
Portable Ground Control Station: Shadow	P05001	Portable Ground Control Station (PGCS)	Z05160	1	X	
Portable Ground Data Terminal (PGDT): TUAV-Shadow	P05002	Portable Ground Data Terminal	Z05158	1	X	
Unmanned Aerial Vehicle (UAV): TUAV-Shadow	U05001	Unmanned Aircraft RQ-7BV2	Z05161	4	X	
Aviation						
Detecting Set, Laser AN/AVR-2B(V)1	L60482	Laser Detecting Set: AN/AVR-2A(V)1	L60414	171	X	
Battle Command & Control						
Communications Central: AN/ASC-15E	C59313	Mission Equipment Package: Airborne Command and Control	C28796	2	X	
Computer Set Digital: AN/TYQ-151(V)3	C61068	Computer Set Digital: AN/TYQ-151(V)1 ULLS-A(E)	C61191	32	X	
Computer Set: Digital OL-603/TYQ	C78827	Computer System Digital: AN/TYQ-161 (V)3 SSMS	Z01766	4	X	
Distribution System Elec: 120V 1ph 60amp	F55553	Distribution System Elec: 120/208V 3ph 40amp	F55485	3	X	
Generator Set: DED 60kW 400Hz Skid-mtd *	G18052	Generator Set: DED 60kW 400Hz Skid-mtd	G62960	2	X	
Generator Set: DED 3kW 60Hz Skid-mtd *	G18358	Generator Set: DED TM 5kW 60Hz *	G42238	12	X	
		Generator Set: DED 5kW 60Hz Skid-mtd *	G11966	259	X	
LTT Trailer-mtd: PP-3001 5kW 50/60Hz	L27002	Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-35 *	P28083	19	X	
LTT Trailer-mtd: PP-3101/5 kW/50/60 Hz/M200A1	L27070	Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-36	P28151	2	X	
LTT Trailer-mtd: PU-2012/10 kW/400Hz	L84758	Generator Set: DED 10kW 400Hz mtd on M116A2 PU-799 *	G53403	13	X	
Power Supply: PP-6224/U *	P40750	Power Supply: PP-2953/U	P38588	537	X	
Rigid Wall Shelter: Command Post	R98145	Command System Tactical *	C40996	17	X	
		Shelter Nonexpandable: S-842A/G	S01428	5	X	
Rigid Wall Shelter: Command Post	R98145	Shelter: Nonexpd Ltwr Mp Rigid-wall S788 102Lx84Wx67H mtd HMMWV	S01563	8	X	
Shelter: Nonexpandable S250	S01427	Shelter: Nonexpd Ltwr MP Rigid-wall S788 102Lx84Wx67H mtd HMMWV	S01563	17	X	
Trailer-mtd: PP-3102 10kW 50/60Hz M200A1	T39849	Power Plant: Diesel TM 10kW 60Hz AN/NJQ-37 *	P42262	25	X	
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	Power Plant: Electric TM 30kW 50/60Hz AN/MJQ-40 *	P42126	26	X	
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	Generator Set: DED Trailer-mtd (TM) PU-803 *	G35851	240	X	
Trailer-mtd: PU-2103/60 kW/50/60 Hz/M200A1	T60034	Generator Set: DED TM 60kW 50/60Hz PU-805 Chassis *	G78306	148	X	
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	Power Plant: Electric TM 60kW 50/60Hz AN/MJQ-41 *	P42194	35	X	
Computer System Digital: AN/TYQ-161 (V)1 LOMAT V1	Z01765	Computer System: Digital AN/TYQ-109(V)1	C27707	61	X	
		Computer System: Digital AN/TYQ-109(V)2	C27775	4	X	

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Table 7

Major Item of Equipment Substitution List

Required Item Nomenclature [1]	Reqd Item Equip No.	Substitute Item Nomenclature [1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Battlespace Awareness						
Digital Topograph System: AN/TYQ-67(V)	D10281	Workstation, Geospatial Intelligence: AN/TYQ-71(V)	D11498	12	X	
Battle Command Transport Networks						
Computer System: Digital AN/PSQ-17	C18380	Computer Digital Mission Planner: AN/PYQ-19	C05003	3	X	
Cryptographic Speech Equipment: MTU TSEC/KY 100 Airterm	C52700	Speech Security Equipment 28V Red: TSEC/KY58	S01441	1,428	X	
Cable Assembly Special Purpose Electrical: CX-11230/G 1/4 mile	C63645	Cable Assembly Fiberoptic: CX-13295()/G	C54995	6	X	
Radio Set AN/PRQ-7	R31430	Radio Set: AN/PRC-112	R82903	3	X	
Radio Set: AN/PRC-104A	R55200	Radio Set: AN/PRC-150A(C)	R62247	164	X	
Radio Set: AN/PSC-5	R57606	Radio Set: AN/PRC-117F(V)2(C)	R87207	429	X	
		Radio Set: Tactical Satellite Base Station	R29636	6	X	
Radio Set: AN/VRC-90F(C) *	R68044	Radio Set: AN/VRC-90D	R67976	3,645	X	
Radio Set: AN/VRC-91F(C) *	R68146	Radio Set: AN/VRC-91D	R68078	700	X	
Radio Set: AN/PRC-119F(C) *	R83141	Radio Set: AN/PRC-119D	R83073	340	X	
Radio Set: AN/VRC-104(V)6 150watt w/PRC-150 HF Radio	R87139	Radio Set: AN/VRC-104(V)5	R44706	132	X	
Speech Security Equipment: TSEC/KY-57	S01373	KY-99: Miniterm	K47623	189	X	
Teleconference System: AN/TYQ-122 *	T43146	Video Teleconference Sys: AN/TYQ-122A	P05024	19	X	
Trunk Encryption Device: TSEC/KG-94	T64771	Encryption Decryption Equipment: KIV-7M	E05003	180	X	
Terminal: Satellite Communication AN/TSC-154	T81733	Satellite Communications Terminal: AN/TSC-93A	S34963	11	X	
Combat Mobility						
Bridge Heavy Dry: Supt (HDSB) 40M MIC96	B26007	Bridge Fixed: Highway Alum UK Medium Girder Bridge 100ft lg Cl60	C22811	7	X	
Detecting Set: Mine AN/PSS-14	D03932	Detecting Set Mine: Portable Metallic AN/PSS-11	G02341	3,094	X	
High Mobility Engineer Excavator (HMEE): Type I	H53576	Tractor Wheeled: DSL 4X4 W/Excavator and Front Loader	T34437	28	X	
Launcher Mine Clearing Line Charge Trailer Mounting: (MICLIC)	L67342	Assault Breacher Vehicle (ABV)	A05001	6	X	
Loader Scoop Type: DSL 2-1/2Cu Yd Hinge Frme W/Multi Purp Bucket	L76556	Loader Scoop Type: 2.5 Cubic Yard	L76897	74	X	
Transporter Common Bridge	T91308	Truck Palletized Load W/W	T82446	4	X	
Field Logistics						
Assault Kitchen (AK)	A94943	Kitchen: Company Level Field Feeding	K28601	192	X	
Container Assembly Refrigerated: 8X8X20 W/9000 Btu Ref Unit	C84541	Multi-Temperature Refrigerate Container System (MTRCS)	M30688	9	X	
Electronic Shop Shelter mtd Avionics: AN/ASM-146 Less Power	H01907	Electronic Shop Semitrailer Mounted: AN/ASM-189 Less Power	H01855	78	X	
Floodlight Telescoping Trailer Mounted Generator: Self Contained	H79426	Floodlight Set Trailer Mounted: 3 Floodlights 1000 watt	F79334	12	X	
Kitchen Field Trailer Mounted: mtd on M103A3 Trailer	L28351	Containerized Kitchen (CK)	C27633	154	X	
Petroleum Quality Analysis Sys (PQAS)	P25493	Petroleum Quality Analysis Sys (PQAS)	P25743	2	X	
LHS-compatible 2K-gal Water Tank-Rack (HIPPO) *	T32629	Forward Area Water Point Supply System (FAW SS) *	F42612	186	X	

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Table 7

Major Item of Equipment Substitution List

Required Item Nomenclature [1]	Reqd Item Equip No.	Substitute Item Nomenclature [1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	Light Capability Rough Terrain Forklift (LCRTF): 5K	L05010	234	X	
		Truck Lift Fork: DED 6000-lb Variable Reach RT Ammo-Hdlg	T48944	22	X	
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	Truck Lift Fork: DED 10000-lb Cap 48In Ld Ctr Rough Terrain	T49119	6	X	
Test Set Radio Frequency Power: AN/USM-491	T89944	RF Power Meter Test Set	Z682FD	134	X	
		Wattmeter Test Set: TS-3793/U	W39339	13	X	
Tank Fabric Collapsible: Water 3K-gal	V15018	Tank Assembly Fabric Collapsible: 3K-gal Water	T19033	9	X	
Torch Outfit Welding: Gas Shielded Arc 1/16 - 1/4" Dia Electrode	W67295	Shop Equipment: Welding	W48391	5	X	
Voltmeter Digital: AN/GSM-64	Y14526	Multimeter AN/GSM-437	M05023	138	X	
Welding Shop Trailer Mounted	Y48323	Shop Equipment: Welding	W48391	120	X	
Test Set Radio: AN/PRM-36	Z01648	Radio Test Set: AN/PRM-34()	R93169	1,622	X	
Force Protection						
Decontaminating Apparatus: Pwr Drvn Lt Wt	D82404	Decontaminating Apparatus Power Driven Skid-mtd: Multipurpose	F81880	1	X	
		Joint Service: Transportable Decontamination	J01197	18	X	
Mask Chem-Bio: Combat Crewman: M51	M13236	Mask Chemical Biological: Combat Vehicle M42	M18526	21,456	X	
General Engineering						
Excavator: Hydraulic (HYEX) Type I Multipurpose Crawler Mount	E27792	Excavator: Hydraulic (HYEX) Type III Multipurpose Crawler Mount	E27860	2	X	
Crane Truck Mounted: Hyd 25-ton Cat (CCE)	F43429	Crane: Wheel Mounted Hydraulic 25 ton All Terrain AT422T	C36586	1	X	
Paving Machine Bituminous Material: DED Crawler-mtd 12 ft	N75124	Paving Machine: Bituminous Material	P05023	2	X	
Scraper Elevating: Self Propelled 8-11 Cu Yd Non-Sectionalized	S29971	Scraper Elevating: Self Propelled 9-11 Cu Yd Sectionalized	S30039	24	X	
Tamper Vibrating Type: Internal Combustion Engine Driven	V11001	Vibratory Plate Compactor	Z05108	12	X	
Tractor FT Low Spd: DSL Lgt Dbp Air Dropbl w/Angdoz w/Winch	W76285	Tractor FT: Low Spd T-5 Type II W/Ripper	T05026	4	X	
Maneuver Combat Vehicle						
Carrier Armored Command Post: Full Tracked	C11158	Carrier Command Post: Light Tracked	D11538	48	X	
		Command System Tactical *	C40996	10	X	
M2A2ODS for Engineers	M31793	Fighting Vehicle: Full Tracked Infantry High Survivability (IFV)	F40375	10	X	
Mobile Gun System (MGS)	M57720	Infantry Carrier Vehicle (ICV)	J22626	17	X	
Recovery Vehicle Full Tracked: Medium	R50681	Recovery Vehicle Full Tracked: Heavy M88A2	R50885	13	X	
Tank Combat Full Tracked: 120mm Gun M1A2	T13305	Tank Combat Full Tracked: 120mm Gun	T13168	29	X	
Maneuver Systems						
Launcher Grenade Armament Subsystem: M257	L44031	Launcher Grenade Armament Subsystem: Screen RP M259	L44748	236	X	
Medical Field Systems						
Dental Field Treatment Operating System	D44052	Operating and Treatment Unit Dental Field	P19377	4	X	
Monitor-Recorder ECG	M79195	Monitor Patient Vital Signs (MVS)	M66626	10	X	
Simulator Pulse Oximetry	S57953	Medical Vital Signs Simulator (MVSS)	Z815FD	2	X	

Major Item of Equipment Substitution List

Required Item Nomenclature [1]	Reqd Item Equip No.	Substitute Item Nomenclature [1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Soldier Systems						
Bayonet-Knife: W/Scabbard for M16A1	B49272	Bayonet Multipurpose System: XM9	B49004	7,470	X	
Mount Machine Gun: 40mm Mk93	M12647	Mount Machine Gun: Mk64 Mod9	M74823	1,937	X	
Night Vision: Goggle	N05482	Mono Night Vision Device: AN/PVS-14	M79678	142,572	X	
		Night Vision Device: AN/PSQ-20	N07848	101	X	
Medium Weapon Thermal Sight (MWTS): AN/PAS-13(V)2	S90535	Night Vision Sight Crew Served Weapon: AN/TVS-5	N04596	6	X	
Heavy Weapon Thermal Sight (HWTS): AN/PAS-13(V)3	S90603	Night Vision Sight Crew Served Weapon: AN/TVS-5	N04596	1,435	X	
Soldier Weapons						
Launcher Grenade: M320A1 *	L69080	Launcher Grenade: M203A2	L69012	6,486	X	
Machine Gun: 5.56mm M249 Light	M39263	Machine Gun: 5.56mm M249	M09009	2,133	X	
Machine Gun: Caliber .50	M39331	Machine Gun: Caliber .50 HB Flexible	L91975	4,838	X	
Machine Gun Grenade: 40mm Mk19 Mod III	M92362	Machine Gun, 40mm Grenade, Mk19 Mod4 Upgunned Weapon Station	M05019	150	X	
		Mk47 Mod 0: Weapon System	M86811	58	X	
Machine Gun: 7.62mm M240L	M92454	Machine Gun: 7.62mm M240B	M92841	294	X	
Pistol 9mm: M11	P47365	Pistol 9mm Automatic: M9	P98152	71	X	
Shotgun: 12 Gage	S40541	Shotgun 12 Gauge Riot Type: 20in Barrel	T39223	705	X	
Strike						
Digital Data Set: AN/PSG-7(V)2	D16185	Computer System Digital: AN/PSG-10 (V)	C05011	2	X	
Computer Set Field Artillery General: AN/GYK-47(V)5	F55607	Computer System Digital: AN/GYK-63(V)2 (AFATDS)	C05032	21	X	
Range Finder-Target Designator: Laser AN/PED-1	R60282	Mod of In-Svc Equip (LLDR LIH)	Z826FD	39	X	
		Target Designator Set: Electro Optical (GLLD)	T26457	45	X	
Radar System: Counter Fire Target Acquisition Radar	Z00737	Radar Set: AN/TPQ-36(V)10	R14284	10	X	
Support Systems						
Platform: Container Roll In/Roll Out	B83002	Flatrack: Palletized Loading	F12581	1,309	X	
Container Handling	C27294	Container Handling Unit (CHU)	C84862	110	X	
Comp Unit Rcp: Air 5 hp Gas and Diesel Drvn 5.1 cfm 3200 psi	C74517	Type II High Pressure Breathing: Air Compressor - Fires	Z05117	6	X	
X-Ray Apparatus: Radiographic Industrial	X91036	Future Radiographic System (FRS)	Z612FD	67	X	
Trailers						
Semitrailer Tank: 5000 Gal Bulk Haul Self-Load/Unload W/E	S10059	Semitrailer Tank: 5000gal Fuel Dispensing Automotive W/E	S73372	9	X	
Trailer: Palletized Loading 8X20	T93761	Palletized Load System: Trailer-CTE	P05025	61	X	
Trucks						
Truck Utility: TOW Carrier Armd 1-1/4 ton 4X4 W/E (HMMWV)	T05096	Truck Utility TOW/ITAS Carrier W/IAP Armor-Ready: M1167 *	T34840	400	X	
		Truck Utility: ECV Armament Carrier W/Iap Armor Ready M1151A1	T34704	142	X	
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	Medical Evacuation Vehicle (MEV) *	M30567	7	X	
		Truck Ambulance: 2-Litter Armd HMMWV	T38707	8	X	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton 10X10	T40999	Truck Cargo: Heavy PLS Transporter 15-16.5 ton W/MHE *	T41067	139	X	
		Truck: Palletized Loading System (PLS)	T81874	149	X	
Truck Cargo: 5 Ton 6X6 MTV W/E LAPES/AD	T41036	Truck Cargo: MTV W/E	T61908	129	X	

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Table 7

Major Item of Equipment Substitution List

Required Item Nomenclature [1]	Reqd Item Equip No.	Substitute Item Nomenclature [1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Truck Cargo: 5 Ton 6X6 MTV W/E W/W LAPES/AD	T41104	Truck Cargo: Drop Side 5-ton 6X6 W/Winch W/E	X40931	22	X	
Truck Cargo: MTV W/E W/W	T41135	Truck Cargo: 5-ton WO/Winch *	T41515	14	X	
		Truck Cargo: MTV W/E	T61908	140	X	
Truck Cargo: MTV W/MHE W/E	T41203	Truck Cargo: W/MHE WO/Winch	T59584	122	X	
Truck Cargo: 5-ton WO/Winch *	T41515	Truck Cargo: 5-ton W/Winch	T41447	96	X	
Truck Cargo: 2 1/2 ton 4X4 LMTV W/E LAPES/AD	T41995	Truck Cargo: 4X4 LMTV W/E	T60081	20	X	
Truck Utility Expanded Capacity Enhanced 4X4: M1165A1	T56383	Truck Utility: Expanded Capacity Enhanced M1165	T38873	55	X	
Truck Tank: WO/Winch	T58318	Truck Tank: Fuel Servicing 2500gal HEMTT	T87243	260	X	
		Truck Tank: Fuel Servicing 2500gal HEMTT W/Winch	T58161	83	X	
Truck Tractor: Heavy Equipment Transporter (HET)	T59048	Truck Tractor: XM1070A1	T05012	139	X	
Truck Cargo: M985A4	T59380	Truck Cargo: Tactical 8X8 Heavy Expanded Mobility W/Med Crane	T39586	95	X	
Truck Cargo: WO/Winch	T59448	Truck Cargo: 4X4 LMTV W/E W/W	T60149	317	X	
Truck Tractor: MTV W/E W/W	T61307	Truck Tractor: M1088A1P2 W/Winch	T61375	22	X	
		Truck Tractor: WO/Winch	T88983	104	X	
Truck Utility: Cargo/Troop Carrier 1-1/4 Ton 4X4 W/E (HMMWV)	T61494	Truck Utility: Heavy Variant HMMWV 4X4 10000 GVW W/E	T07679	2,954	X	
Truck Utility: Expanded Capacity 4X4 W/E HMMWV M1113	T61630	Truck Utility: Heavy Variant HMMWV 4X4 10000 GVW W/E	T07679	1,102	X	
Truck Cargo: MTV LWB W/E	T61704	Truck Cargo: LWB WO/Winch	T93271	126	X	
		Truck Cargo: MTV LWB W/E W/W	T61772	8	X	
Truck Van: M1079A1P2 WO/Winch	T62359	Truck Van: LMTV W/E	T93484	89	X	
Truck Dump: MTV W/E	T64911	Truck Dump: 10-ton WO/Winch	T65342	4	X	
Truck Dump: MTV W/E W/W	T64979	Truck Dump (FMTV) 10-ton: M1157	T65115	4	X	
		Truck Dump: 10-ton W/Winch	T65274	3	X	
Truck Dump FMTV: 10-ton	T65047	Truck Dump: 10-ton WO/Winch	T65342	1	X	
Truck Dump (FMTV) 10-ton: M1157	T65115	Truck Dump: 10-ton W/Winch	T65274	8	X	
Truck: Expandable Van WO/Winch	T67136	Truck Van: Expansible MTV W/E M1087A1	T41271	49	X	
Truck Tractor: WO/Winch	T88983	Truck Tractor: MTV W/E	T61239	139	X	
Truck Utility: Expanded Capacity Up Armored HMMWV 4X4 W/E	T92446	Truck Utility: ECV Armament Carrier W/IAP Armor Ready M1151A1	T34704	640	X	
Truck Cargo: 8X8 HEMTT W/LHS *	T96496	Truck Palletized (LHS): M1120A4	T55054	71	X	
Truck Dump: 20-ton DED 12 cu yd Cap (CCE)	X44403	Truck Dump: 5-ton 6X6 W/E	X43708	51	X	

1. "*" indicates a Critical Dual Use (CDU) equipment item

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC top ten prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	Rotary Medium Cargo (H-60M) Modernization	826	696	varies	$4,513,600,000	UH/HH-60M helicopters, classified as Critical Dual Use (CDU) items, replace UH-60A helicopters in ARNG formations. The ARNG has sufficient UH-60s with modern substitutes, but the majority of the fleet are legacy variants. The projected dates for H-60A divestiture and H-60M buyout will be FY 2025 and FY 2028, respectively. H-60As are replaced by H-60Ms, cascades of UH-60Ls, and the A-A-L conversion line. ("# Items Short" is defined as any H-60 model less than H-60M, or H-60M/V after FY 2018.)
2	Assured Mobility	16,901	6,978	varies	$318,664,375	This category includes Countermine, Fire Fighting, Explosive Ordnance Disposal (EOD), Assault Breacher Vehicle, and Bridging Systems. Family of Boats and Motors (FoBaM), Bridging systems, and OPS Kits are critical needs to support CDU requirements for homeland security. The current on-hand equipment is aging and requires modernization. and the current Army fielding plan does not replace equipment to mission readiness until FY 2032. The total shortage cost in this table reflects the cost of modernizing the existing equipment.
3	Chemical and Biological Protective Shelter (CBPS)	277	271	varies	$251,000,000	The NBC Force Protection Budget Operating System (BOS) consists of systems to support chemical, biological, radiological, and nuclear activities. Current on-hand 6 M8 series. The deliveries of four systems for ARNG were projected for FY 2014, but did not happen.
4	Semitrailer: Flatbed 34-ton & 25-ton	5,091	1,124	varies	$25,475,428	The ARNG is short both 34-ton and 25-ton semitrailers. Both fleets also consist of 20 year old to 40 year old systems. The ARNG requires a contract to procure new and add to the existing 34-ton and 25-ton semitrailer fleets. The Tactical Wheeled Vehicle (TWV) Reduction Study V will reduce prime mover requirements, but the reduction will not reduce trailer transport mobility requirements for maneuver units. There is not a ASA (ALT) a contract to purchase trailers.
5	High Mobility Multipurpose Wheeled Vehicle (HMMWV) Ambulance Recapitalization	1,746	1,283	$313,000	$401,579,000	The ARNG used National Guard and Reserve Appropriation (NGREA) funding to purchase its 500 ambulance shortfall. The ARNG achieved 100% of the ambulance requirement in 2015. However, over 70% of the ground ambulance fleet is more than 20 years old and requires recapitalization to extend its service life. Ground ambulances are critical assets to the ARNG's operational and domestic missions. The Army's Tactical Wheeled Vehicle Modernization Strategy standard is to modernize the fleet to 50% through vehicle recapitalization. The total shortage cost in this table reflects the cost of modernizing the existing ARNG HMMWV ambulances to 50% in accordance with the Army Modernization Strategy.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
6	Construction Engineer Equipment	4,345	1,516	varies	$125,665,264	This category includes the Heavy Crane, Dozers, Graders, HYEX, Water Well Drill Systems, and various types of compaction-rollers that are critically under-filled or being filled at a rate that will never achieve ARNG modernization standards. This portfolio is unique in that the Army as a whole is a very minor portion of the vendor's business. The lengthening of fielding directly impacts ARNG modernization efforts. This portfolio has relied upon NGREA funding to improve modernization goals. The Army's Brigade Engineer Battalion Force Design Update will double the amount of engineers in each of its Brigade Combat Teams (BCTs).
7	Assault Kitchen (AK)	959	435	$42,000	$18,270,000	The Assault Kitchen (AK) replaces the current legacy company-level field kitchens. The AK is a highly mobile field-feeding platform that effectively meets the nutritional requirements of the forward deployed troops and the operational and domestic mission requirements while reducing the field logistical footprint. The total shortage cost in this table reflects the cost of modernizing the ARNG existing field-feeding systems.
8	Warfighter Information Network Terrestrial (WIN-T) (Increment II)	2	2	$4,725,000	$9,450,000	Provides on-the-move capability and a mobile infrastructure by employing military and commercial satellite connectivity and line-of-sight (terrestrial) radios and antennas to achieve end-to-end connectivity and dynamic networking operations. It also introduces networking radios and enhances Network Operations (NetOps) for network planning and monitoring. Soldiers can utilize applications for maneuver, fires, and intelligence from inside vehicles, enabling commanders to make decisions on-the-move rather than being tied down to a fixed command post and ensuring effective and unpredictable offensive and defensive operations. This will enable effective C2 between numerous domestic operations within the highly fluid environment created by natural disasters/ civil disturbances/ etc. The ARNG does not have any FY 2016 shortages (specifically Inc 1). Force structure changes over the next few years will cause (Inc 1) requirements to artificially creep upward; e.g., new force structure will be documented in FY 2016, and old force structure will not be fully removed from requirements documents until FY 2017. The ARNG does not have any Inc 2 requirements documented at this time, nor does the ARNG have any Inc 2 equipment on-hand. It is anticipated the ARNG will receive an Inc 2 fielding in FY 2018 for one IBCT and one DIV HQ. Unit selection is currently pending with the ARNG G-3.
9	Assault Breacher Vehicle (ABV)	30	12	$4,500,000	$54,000,000	Recommend the Combat Dozer Blade (CDB) version. It would serve as a CDU piece as it is equipped to clear obstacles and to do earth moving tasks such as: Preparing defensive positions, Breaching defensive earthworks, Filling trenches, craters, and anti-tank ditches, Preparing ground for launching bridges , Clearing rubble, debris, and urban road blocks, Ground levelling and route opening. This would provide capabilities relative to both operational and natural disaster requirements.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
10	Joint Light Tactical Vehicle (JLTV)	2,096	2,096	$250,000	$524,000,000	The JLTV gives greater crew protection providing ARNG troops with greater survivability in operational environments while also providing reliable modernized troop movement capabilities. It also will facilitate wide-ranging C4ISR capabilities to enhance the utility and optimize overall system performance. The JLTV will ultimately give the ability to scale and evolve as operating environments change allowing the mobility often necessary in domestic emergency situations.

III. Army Reserve Overview

A. Current Status of the Army Reserve

> *Generating the Army is a complex endeavor that requires **policy decisions**, **dollars**, Soldiers, infrastructure, and most importantly, **time**.*
>
> - GEN Raymond Odierno, 38th Chief of Staff, Army

Top Army Reserve Focus Areas

- Impacts of Sequestration
- Requirement for Dedicated & Sustained Funding of an Operational Army Reserve
- Policy Revisions Required to Support an Operational Army Reserve
- Modernization and Compatibility Gaps Impeding Interoperability

1. General Operational Overview

Since September 11, 2001, the Army Reserve has deployed over 300,000 Soldiers globally, providing unique enabling capabilities crucial to Joint Forces fulfilling National Defense Strategy demands. Over the last 15 years, out of necessity, the Army Reserve became an operational force, which was made possible due to Congress investing supplemental and Overseas Contingency Operations (OCO) funds. In today's sequestration era, reductions in Army structure combined with increasing global instability and emerging threats require the Army Reserve, more than ever before, to remain an operational force. Retaining the Army Reserve as an operational force requires dedicated and sustained funding to prevent reverting back to a cold-war era strategic reserve, which lacked the capabilities to respond to today's ever increasing velocity of instability around the world. Dedicated and sustained funding provides predictability, guaranteeing that future generations are ready to answer the Nation's call while honoring the legacy of our Nation's sons and daughters who gallantly served while transforming the Army Reserve into an operational force in a time of conflict.

a. Status of the Army Reserve as an Operational Force

> *To date, the Army has not established the specific equipping, manning, and training levels required for an Operational Reserve, nor adequately budgeted for most of the costs required for sustaining the Army Reserve in an Operational Role.*
>
> - LTG Jeffrey Talley, 32nd Chief of Army Reserve and 7th Commanding General, U.S. Army Reserve

Department of Defense (DOD) Total Force Policy requires the Military Departments to organize, man, train, and equip their Reserve Components as an integrated operational force to provide predictable, recurring and sustainable capabilities. The Army Reserve is not currently funded to remain part of the operational force. Under the Budget Control Act (BCA), reductions in funding prevent needed policy revisions and adjustments to base budget funding strategies required to sustain the Army Reserve as an operational force. Post-BCA funding strategies and policies mirror the post-Cold War strategies stemming from the 1993 Report on Bottom-Up Review, which converted the Army Reserve to an enabler centric force to "seek compensating leverage by using the Army Reserve to reduce risks and control the costs of a smaller active Army force".

Funding constraints imposed by sequestration are rendering Total Force Policy obsolete and driving change in decision making models. BCA budget reductions have led to difficult decisions to seek "compensating leverage" by limiting documentation of requirements and delaying funding of enabler programs to retain maximum flexibility in funding higher priority maneuver programs. Additionally, current decision making models prioritize investments in combat

equipment for Brigade Combat Teams (BCTs) ahead of initial modernization investments in logistical and support equipment residing in units found in the Army Reserve. Initially, this was necessary to compensate for the 25 percent reduction in modernization programs resulting in restructuring, delays, and cancellations. Subsequently, this created an imbalanced funding strategy forcing the Army to assume greater risk in enabler programs.

Funding imbalances are generating tiered procurements and widening modernization gaps complicating integration of an operational Army Reserve that is compatible with joint forces. Consequently, the Army Reserve remains the least funded, least equipped, and least modern Army component. Ultimately, this degrades readiness and limits flexibility to globally deploy the Army Reserve as an operational force to meet the demands of the National Defense Strategy.

b. Homeland Defense (HD) and Defense Support of Civil Authorities (DSCA)

Today, roles and responsibilities for HD and DSCA are greatly expanded for all DOD Title 10 forces under federal law in the National Defense Authorization Act of 2012. Army Reserve equipment identified as Critical Dual Use (CDU) has an aggregate on-hand fill rate of 89 percent. Priority CDU modernized equipment shortfalls exceeds $500M and include the Chemical, Biological Protective Shelter (CBPS); Nuclear, Biological, and Chemical Reconnaissance Vehicle (NBCRV); and HMMWV ambulance. The CBPS provides protection against chemical, biological, radiological, and nuclear (CBRN) events to surgical teams, the NBCRV delivers early detection capabilities, and the HMMWV ambulance supports ground medical evacuations. All systems are resident in Army Reserve medical and chemical units assigned to Federal response force packages and required to respond within 48 hours. Future investments ensure Army Reserve units such as the 477th Medical Company (Ground Ambulance) from Duluth, Minnesota, and 392nd Chemical Company (Hazardous Response) from Little Rock, Arkansas, are equipped with the most modern systems in supporting Federal responses.

2. Status of Equipment

a. Equipment On-hand

When including substitute items and the redistribution of equipment from the Active Army, the Army Reserve's aggregate Equipment On-hand (EOH) improved from 87 to 89 percent in FY 2015. When excluding substitute items, the Army Reserve's aggregate EOH in FY 2016 is 82 percent. Equipment identified as mission-essential is filled at 64 percent and creates gaps in critical enabler capabilities resident in the Army Reserve. In FY 2016, 26 percent (including substitutes) of the Army Reserve's mission-essential equipment is filled below 65 percent and does not meet minimum readiness standards for global deployments. This places inherent risk in maintaining an operational Army Reserve equipped to provide unique enabling capabilities necessary to establish the capacity to sustain joint forces in a theater of operation. While aggregate quantities of equipment increased through redistribution, the overall quality decreased by not accounting for age when measuring modernization and readiness required of an operational Army Reserve.

b. Average Age of Major Items of Equipment

Due to sequestration, the Army Reserve is forced to retain older equipment longer. Strategies to mitigate the effects of aging fleets include redistributing newer, but less modern equipment to compensate for delayed and cancelled procurement programs that are proving unaffordable. As equipment approaches and surpasses expected life-cycles without modern replacements it generates an increase in sustainment cost. Funding reductions in depot maintenance programs eliminate affordable options for extending the life-cycle of older equipment. The Army Reserve's Vietnam-era M113 Armored Personnel Carrier fleet exemplifies the problem of retaining equipment beyond its economic useful life (EUL). The M113A3 was manufactured in the 1980s, exceeds the 25-30 year EUL, and was identified as obsolete. The Armored Multipurpose Vehicle (AMPV) was identified as the replacement for the M113. However, the Army Reserve is not prioritized for funding or projected to receive the AMPV as a modern replacement and must retain the M113A3. This challenges Army Reserve Soldiers assigned to one of 17 Mobility Augmentation Companies, to include the 366th Engineer Company from Canton, New York, or 979th Engineer Company from Lexington, Kentucky, in their efforts to sustain legacy equipment without funding. Under BCA, depot maintenance funding is not commensurate with the increasing cost to maintain aging and obsolete equipment not programmed for replacement in the Army Reserve. Table 2-3 highlights the average age of major items in the Army Reserve.

Table 2-3. Army Reserve Top Legacy Equipment

Nomenclature	Line Item Number	Average Age (years)	Economic Useful Life (years)
Armored Vehicle Launched Bridge	L43664 & C20414	39	25-30
Heavy Expanded Mobility Tactical Truck (HEMTT) Cargo M985*	T39654	35	20-25
M113A3 Armored Personnel Carrier	C18234	33	25-30
HMMWV Ambulance M997A1/A2*	T38844	27	15-20
Trailer Tank Bulk Petroleum 5 & 7.5K*	S10059 & S73119	23	17-25
Truck Tractor M915*	T61103	22	20-25

* Critical Dual Use (CDU) Equipment

c. Maintenance

Depot maintenance funding for the Army Reserve was reduced by 76 percent from $243M in 2012 to $59M in 2015 reflecting pre-9/11 funding levels. Reductions in depot maintenance funding erode readiness and cost-saving efforts to extend equipment life-cycle necessary to control sustainment cost. Delaying repairs of older and less reliable equipment is cost prohibitive as reflected with less than one percent of the Army Reserve's M113 fleet funded for life-cycle extension programs through FY 2019. This is further exemplified in the degradation of echelons-above-brigade (EAB) bulk petroleum capacity, of which 92 percent of Total Army capability resides in the Army Reserve. Recently, 15 legacy fuel tankers were determined uneconomically repairable and divested without replacements. This resulted in a 93,000 gallon reduction in EAB bulk petroleum capacity for units like the 705th Petroleum Transportation Company from Dayton, Ohio, and 296th Petroleum Transportation Company from Salina, Kansas. The devastating effects of sequestration are indiscriminately distributed between the Army Reserve

and organic industrial base. For example, in 2012 the Army Reserve was funded $104M to induct 1,028 pieces of equipment into depot maintenance programs at Red River Army Depot (RRAD). In 2015, funding was reduced 91 percent to $9.7M, limiting the Army Reserve to 171 pieces of equipment inducted into RRAD life-cycle extension programs. As such, curtailing investments in life-cycle extension programs of legacy enabler systems generates an insurmountable rolling deficit jeopardizing compatibility with Total Army and joint forces.

d. Compatibility of Current Equipment with the Active Component

Under BCA, the Army Reserve will never achieve full operational compatibility with the Total Army and joint forces. Budget reductions forced difficult decisions leading to a prioritization model that lends itself to a one-dimensional outcome that excludes enabler programs resident in the Army Reserve. Reprioritizing investments in a fiscally constrained environment established a tiered procurement process disproportionately affecting the Army Reserve's ability to execute mission command when required to use incompatible systems. For example, nearly 90 percent of the Army Reserve's mission command systems are multiple generations behind the Total Army and joint forces. Army Reserve systems are predominantly using first generation software that is incompatible with Active Component platforms using 11th and 12th generation software applications. Although this is just one example of the loss of compatibility, mission command systems are located throughout all Army formations and require extensive training to operate. This leads to extended mobilization timelines consistent with a pre-9/11 strategic reserve. Today's increasingly volatile global security environment requires a balanced funding strategy and a revised multidimensional prioritization model to keep pace with the demand for a modernized and operational Army Reserve.

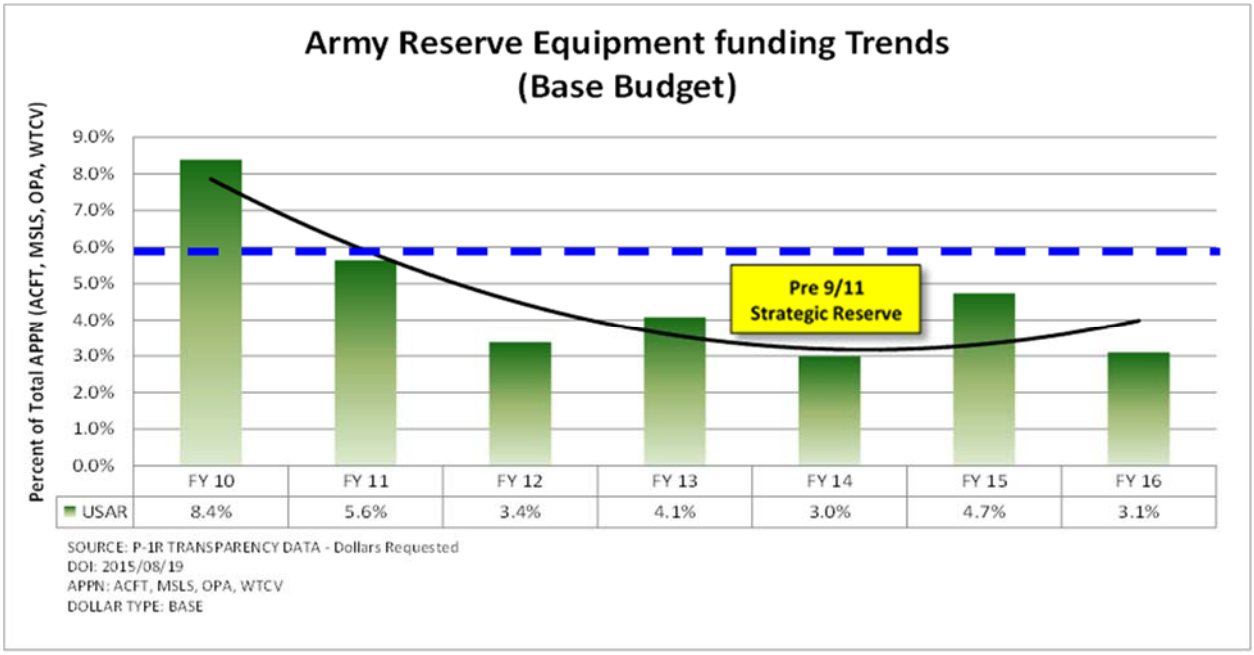
e. Modernizing Critical Army Reserve Capabilities

Despite EOH improving to 89 percent in 2015 through the redistribution of equipment, the Army Reserve's modernization rate decreased from 76 percent to 74 percent due to declining investments stemming from BCA. In the post-BCA era, investments in enabler systems are disproportionately affected by a one-dimensional prioritization model focusing on combat systems. As a result, tiered procurements evolve while unintentionally delaying modernization and accelerating early cancellations of enabler programs. The cascading effect is a further degradation of current and future readiness in the Army Reserve as modernization efforts are disrupted without ever achieving modernization goals. For example, new production lines for the M915A5 Line-Haul Tractor did not meet defense industrial base (DIB) expectations resulting in new procurement ending without renewing contracts to fulfill programmed modernization requirements for the Army Reserve. As a result, less than 42 percent of the Army Reserve's line-haul capability meets minimum force protection standards. Future investments in modernizing enabler programs is essential in restoring DIB confidence and increasing survivability for transportation and bulk-petroleum distribution companies like the 236th Transportation Company in Decatur, Illinois, or 656th Bulk-Petroleum Transportation Company in Hobart, Indiana. Under BCA, continued funding gaps in modernization strategies force the Army to assume greater risk in building theater capacity to sustain operations in a non-permissive environment.

3. Budget

The enactment of the 2011 Budget Control Act reduced requested procurement funding for the Army Reserve by 46 percent ($1.1B to $591M) from FY 2011 to FY 2015. Sequestration further reduced requested procurement funding for the Army Reserve by 58 percent ($1.1B to $461M) over the period from FY 2011 to FY 2016. As an enabler-centric force, the Army Reserve is affected the greatest with reductions disproportionately applied towards lower priority enabler programs. Despite the Army Reserve comprising 20 percent of the Total Army, the Army Reserve receives less than 3.5 percent of the procurement funds in the base budget in 2016. Establishing a sustained funding rate in the base budget is critical to executing a viable strategy for modernizing enabling platforms. This is essential in managing the Army Reserve as an operational and compatible force integrated with joint forces in accordance with DOD Total Force Policy. Figure 2-1 below reflects changes in procurement funding for the Army Reserve.

Figure 2-1. Army Reserve Procurement Funding



4. Army Reserve Equipping Strategy

The desired end state of the Army Reserve's equipping strategy is to equip and modernize an enduring operational Army Reserve compatible with Total Army and joint forces. The end state is aligned with DOD's Total Force Policy directive to manage the Reserve Components as an operational force completely integrated with joint forces. Since enactment of BCA, the Army Reserve averages less than 3.5 percent of the base budget for modernization. Without predictable funding rates, insufficient funding makes achieving the desired end state unattainable and marginalizes the Total Force Policy. Post-BCA fiscal constraints require a rebalanced funding strategy with a multiphased prolonged approach to achieve the desired end state.

In the near-term, Army Reserve will decline redistribution, accelerate divestment, and refocus investments to maximize cost-avoidance. Declining redistribution of lower quality equipment

prevents absorbing unfunded maintenance cost and subsequently creates flexibility for limited investments in unfunded enabler programs. Army Reserve investments will focus on non-developmental item (NDI) and commercial off-the-shelf (COTS) solutions aimed at improving survivability of critical early-entry and theater-opening capabilities.

In the near to mid-term, the Army Reserve supports maximizing cost-avoidance measures through recapitalization and depot life-cycle extension programs. The Army Reserve seeks to capitalize on existing Public Private Partnerships (PPP) between Army depots and DIB partners to gain efficiencies and maximize cost-avoidance in achieving modernization goals. When sufficient means are available, Army Reserve will induct equipment into depot maintenance rebuild and life-cycle extension programs to offset prolonged procurements.

The final phase includes a long-term and enduring approach for documenting requirements, revising policy, and obtaining parity in the base budget. Timely documentation of requirements enables the Army Reserve to accurately depict shortage values and forecast sustainment costs. Introducing needed policy revisions and establishing a dedicated and sustained funding rate slow and reverse the effects of sequestration and ensure compliance with DOD Total Force Policy to manage the Army Reserve as an operational force that is integrated with Joint Forces.

5. Equipping Successes

In 2015, Army Reserve's notable equipping successes were achieved with Congressional, Department of State, DOD, and Department of the Army support. Most noteworthy is the ongoing effort to improve modernization of the Army Reserve's legacy HMMWV ambulance fleet. This is made possible through Congressional support of an existing PPP between Rock Island Arsenal and DIB partners. Department of Defense support enabled the Army Reserve to successfully transfer equipment to fulfill Department of State requests to bolster coalition partner capabilities in combating Islamic State of Iraq and the Levant (ISIL). Soldiers serving with Hawaii's 100th Infantry Battalion of the 442nd Infantry Regiment (100/442nd IN BN), recognized as the most decorated unit in Army history, successfully tested Joint Light Tactical Vehicle (JLTV) prototypes in a combat-simulated environment. Integrating the 100/442nd IN BN with the Army and joint forces to test JLTV demonstrates the effectiveness of DOD's Total Force Policy when adequately funded. When resourced as an operational force, the Army Reserve is invaluable in providing interoperable and enabling support to joint, whole-of-government, and multinational operations.

B. Future Years Defense Program (FY 2017–FY 2019)

1. New Equipment Procurements

a. Base Budget

Due to BCA budget reductions, projected President’s Budget (P-1R) submissions for Army Reserve procurement funding averages less than 4.1 percent through FY 2019, despite the Army Reserve accounting for 20 percent of the Total Army. The Army Reserve expects the funding trend to continue to flatten in future years with funding levels projected at 3.3 percent ($431M) in FY 2017, 5.7 percent ($802M) in FY 2018, and 2.9 percent ($410M) in FY 2019. When discounting the large CH-47F procurement scheduled for FY 2018, Army Reserve averages less than 3.1 percent. Continued budget reductions in procurement and depot maintenance degrade

readiness and jeopardize sustaining the Army Reserve in an operational role. The Army Reserve requires a dedicated and sustained funding rate of at least 10 percent of the Army's base equipping budget to remain an operational Army Reserve that is compatible and integrated in accordance with DOD's Total Force Policy.

b. National Guard and Reserve Equipment Appropriation (NGREA)

The Army Reserve appreciates Congress' support of NGREA to procure readiness items not funded in the base budget. This support proved vital following the implementation of BCA, which resulted in a 46 percent reduction in requested procurement funding for the Army Reserve. In the post-BCA era, NGREA has been an invaluable resource representing over 35 percent of total procurements for the Army Reserve (FY 2013 to FY 2015). Applying NGREA towards unfunded requirements facilitates investments in modernizing enabling systems for the Army Reserve. For example, in 2015, 88 percent of the Army Reserve's radiological detection capability was modernized with investments funded through NGREA. In the current environment, such improvements in readiness and modernization are unattainable without NGREA. Continued support of NGREA is crucial to modernize critical enabling systems required to retain an operational Army Reserve compatible and integrated with joint forces.

2. Anticipated Transfers from Active Component to Reserve Component

Table 5 Projected Equipment Transfer/Withdrawal Quantities reflects equipment transfers from AC to the Army Reserve from FY 2017–FY 2019.

3. Anticipated Withdrawals from Army Reserve Inventory

The Army Reserve transferred bridging equipment consisting of twelve Interior Bay Bridges, eight Ribbon Bridges, eight Bridge Erection Boats, eight improved Boat Cradles, and 28 Common Bridge Transport vehicles to support Foreign Military Sales. In accordance with the DOD Instruction (DODI) 1225.06 Payback Plan, the Army will provide new modern replacements no later than FY 2017.

4. Equipment Shortages and Modernization Shortfalls

The Army Reserve equipment modernization shortfalls are discussed below. Data provided for calculating shortfalls derives from hybrid Structure and Composition files for a 980K force, and does not completely reflect the current modernization posture of the Army Reserve. Approximately 25–40 percent of Army Reserve undocumented requirements are reflected in approved Basis of Issue Plans and pending documentation. When including currently undocumented requirements, shortage values range from $11B to $12.5B. See Annex A at the end of this chapter narrative for an explanation of the embedded tables in these sections.

a. Aviation Portfolio

Army Reserve aviation consists of a mix of fixed-wing, and Lift, Cargo, and Attack rotary-wing aircraft, of which, approximately 10 percent of the Lift, and 42 percent of the fixed-wing aircraft are considered CDU in support of HD and DSCA missions.

Investments in New Procurement and Modernization: Modernization and new procurement of Army Reserve aircraft is reliant on funding in the base budget. From FY 2014 to FY 2015,

investments in Army Reserve aircraft totals $338M. In FY 2018, $454M is programmed for new-build procurement of CH-47 Chinooks. Funding in the base budget from FY 2016 to FY 2019 is projected at $525M (see Table 2-4.)

Table 2-4. Aviation Procurement Funding

Funding Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Base Budget (P-1R)	$22M	$316M	$10M	$20M	$475*M	$20M*

* Projected

Aviation Restructuring Initiative: The Army Reserve has begun conversion of two of its Attack Reconnaissance Battalions to Assault Helicopter Battalion design. The UH-60L airframe will replace the AH-64D, and UH-60L fleet will increase from 48 to 60 under the new assault helicopter unit design. The Army Reserve is ahead of schedule in the conversion of two battalions with the exchange of aircraft from the Active Component with UH-60Ls to Fort Knox, Kentucky, and Conroe, Texas. Army Reserve is on schedule to complete the conversion in FY 2019.

The Army Reserve's top critical documented shortages within the Aviation Portfolio are listed in Table 2-5 below.

Table 2-5. Aviation Top Equipment Shortages

Capability	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
UH-60L Black Hawk*	60	30	30	50%	$147M
UH-60M Black Hawk*	60	0	60	100%	$1,000M
HH-60M Black Hawk*	45	30	15	33%	$255M
C-12 Airplane*	43	7	36	84%	$110M

* Critical Dual Use Equipment

Focal Points for Army Reserve Aviation Portfolio:

- FY 2018 funding ($454M) completes the new production buy-out of CH-47Fs. 100 percent (3 of 3) of Heavy Helicopter Companies will be equipped with most-modern CH-47F Chinooks.
- 66 percent (2 of 3) of Air Ambulance Companies are equipped with the most modern HH-60M Blackhawks. The remaining unit is equipped with UH-60L Blackhawks.
- The Army Reserve fixed-wing aircraft fleet (average age 25 years) is a candidate for modernization.

b. Mission Command (The Network) Portfolio

The Mission Command portfolio consists of four capability areas: transport, applications, enablers, and integration that facilitate joint interoperability. The Army Reserve is generations behind in fielding the most modern mission command systems, thus widening capability gaps in communicating with the Total Force. As the Mission Command modernization strategy is implemented, the Army Reserve is not sufficiently prioritized within fielding plans to achieve

battlefield commonality and parity within the Total Force. It is difficult to discern the portfolio funding outlook due to fiscal constraints driving continued requirement adjustments. Mission Command equipment shortages and modernization budget shortfalls range from $1.7B to $3B.

Impacts of Sequestration on Mission Command:

- Budget reductions force the disproportionate reprioritization of resources, which excludes lower priority EAB enabler units and prevents compatibility with joint forces.
- Prioritization of funding occurs outside the budget cycle, causing reoccurring delays in fielding tactical battle command systems and software upgrades for EAB enabler units.
- In FY 2015, every Army Reserve unit scheduled to field tactical battle command systems was delayed beyond FY 2016. As such, only 10 percent of units are compatible with joint forces.

Risk: Ability to comply with the intent of DOD Total Force Policy to integrate the Army Reserve as an operational and compatible member of a balanced and joint force.

Mitigation: To offset budget constraints and the effects of tiered procurement in the near term, recommend fielding modern mission command training sets tailored for an operational Army Reserve as an affordable interim solution. In the mid-to-long term, revise policies and adjust base budget funding strategies to account for managing the Army Reserve as an operational force.

c. Sustainment Transportation Portfolio

The majority of the Army's EAB transportation capability resides within the Army Reserve. The portfolio consists of motor transport and watercraft capabilities with the Army Reserve providing over 55 percent of all watercraft and providing 43 percent of motor transport units comprising light, medium, and heavy Tactical Wheeled Vehicles (TWV).

Investments in New Procurement and Modernization: In FY 2014 and FY 2015, the Army's base budget procurement funding ($216M) accounted for 56 percent of the total TWV portfolio investments ($389M), with NGREA funding ($173M) the remaining 44 percent. In FY 2015, Army base procurement funds totaled $64M. The Army Reserve invested $102M to modernize the TWV fleet through NGREA funding. From FY 2017 to FY 2019, $194M is projected in the base budget to improve modernization levels within the TWV fleet. (See Table 2-6 below.)

Table 2-6. Tactical Wheeled Vehicles Procurement Funding

Funding Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Base Budget (P-1R)	$152M	$64M	$122M*	$115M*	$61M*	$18M*
NGREA Investment	$71M	$102M				

* Projected

Budget trends are creating funding imbalances in TWV readiness and modernization accounts. Consequentially, delays in new procurement and modernization is increasing sustainment cost required to maintain readiness levels of the legacy TWV fleet, which risks interoperability with Total Army and joint forces. Top unfunded shortfalls are listed in Table 2-7 below.

Table 2-7. Tactical Wheeled Vehicles Top Equipment Shortages

Equipment	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
HMMWV Ambulance M997A3*	382	194	188	49%	$63M
HEMTT*	1,708	1,098	607	36%	$209M
Truck Line Haul M915*	2,432	986	1,146	47%	$470M
Heavy Dump Truck – 20 Ton*	234	0	234	100%	$88M

* Critical Dual Use Equipment

Impacts of Sequestration Sustainment Transportation:

- Early cancellations without fulfilling Army Reserve programmed requirements degrades readiness and survivability of early-entry and theater-opening capabilities. Example: Production of up-armored M915A5 Line-Haul Tractor was permitted to expire prior to fulfilling Army Reserve requirements.
- The Heavy Dump Truck program of record has no modern replacement identified and exceeds economic useful life.
- The Army's HMMWV recapitalization program ended in FY 2010 with the newest vehicles produced reaching the stated goal of a 15-year EUL in FY 2025. Army recapitalization was delayed due to competing program requirements.
- The HMMWV Ambulance modernization program is not funded through the base equipment budget and is reliant on Congressional support.
- New acquisition programs consistently prioritize the Army Reserve in the back-end of fielding schedules; for example, the projected JLTV fielding schedule for the Army Reserve begins 4 years after starting full rate production and expected to achieve approximately 25 percent of JLTV requirements in FY 2032.
- TWV strategy limits funding to modernize armored-capable vehicles, which comprise 50 percent of the total fleet. There is no funding strategy to modernize non-armored vehicles.

Risk: The Army Reserve supports Army's responsibility to provide Common User Land Transportation (CULT) support. Prioritization models and tiered procurement of Army Reserve enabling transportation modernization programs create risk in providing CULT support to the Joint Force.

Mitigation: Recommend accelerating the reopening and expansion of HMMWV modernization program through established PPP between Army depots and DIB partners to extend life-cycle and control increasing sustainment cost not funded in the base budget. Invest in NDI solutions to bridge funding gaps in modernizing non-armored TWVs.

d. Mobility and Engineering Portfolio

The Army Reserve provides 36 percent of the Army's EAB Mobility structure. The portfolio consists of construction, tactical bridging, engineer support, command and control, mines and munitions, counter explosive hazard, and armored vehicle systems. Mobility equipment shortages and modernization budget shortfalls exceed $765M in documented requirements and over $1.6B when including undocumented modernized requirements.

Investments in New Procurement and Modernization: From FY 2014 to FY 2015, NGREA represented 38 percent of the total investments for procurement of mobility and engineering systems. The FY 2016 to FY 2019 base budget only funds 36 percent ($366M) of the total documented requirements, thus leaving 64 percent ($580M) of the shortfall unfunded (see Table 2-8 below.)

Table 2-8. Mobility and Engineering Procurement Funding

Procurement Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Base Budget (P-1R)	$36M	$39M	$51M*	$54M*	$120M*	$141M*
NGREA Investment	$30M	$16M*				

* Projected

The near to mid-term base budget strategy focuses on resetting and equipping new capabilities in BCTs, which allows Army to assume greater risk in EAB enabler-equipment acquisition programs. Extending procurement timelines for mission-essential Mobility equipment is directly impacting Army Reserve readiness posture and creating capability gaps with the Total Army and Joint Force. Top engineering and mobility equipment modernization shortages are listed in Table 2-9 below.

Table 2-9. Mobility and Engineering Top Equipment Shortages

Equipment	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
Joint Assault Bridge (JAB)*	102	7	95	93%	$608M
Common Bridge Transport M1977 A4*	504	56	448	89%	$180M
Medium Mine Protected Vehicle (RG31)	264	80	184	70%	$101M
Bridge Erection Boat (BEB)*	126	28	98	78%	$88M
Heavy Crane (50 Ton)	91	35	56	62%	$62M

* Critical Dual Use Equipment

Impacts of Sequestration on Mobility and Engineering:

- Force design updates increased Heavy Crane requirements by 47 percent, which surpasses the current acquisition objective; leaving the Army Reserve with an unfunded requirement.
- Tiered procurement delays fielding timelines for the Joint Assault Bridge and generates an insurmountable maintenance deficit for the Armored Vehicle Launched Bridge leading to reduced capacity and degraded readiness.
- Investments in survivability and force protection of the Common Bridge Transport were reduced over 50 percent due to sequestration.

Risk: Assured mobility base funding priorities are linked to the accelerated activation of Brigade Engineer Battalions in support of BCTs. As such, Army Reserve EAB mobility support to the

joint force is at risk due to tiered procurement, accelerated divestment decisions, and delayed fielding timelines.

Mitigation: Align procurement timelines with force design changes and synchronize maintenance funding with production and divestment schedules. Enhance PPP with Army depots and apply NGREA to investments in NDI and COTS solutions.

e. Field Logistics Portfolio

The portfolio comprises maintenance, medical, bulk supply, and liquid logistics capabilities, the majority of which are CDU items. Over 50 percent of the Army's capacity for Field Logistics resides in the Army Reserve. Unique capabilities include 92 percent of the Total Army's bulk petroleum support, 80 percent bulk supply, and 59 percent medical capabilities.

Investments in New Procurement and Modernization: In FY 2014 and FY 2015 the Army's base budget procurement funding ($77M) accounted for 57 percent of total field logistics portfolio investments ($136M), with NGREA funding ($59M) accounting for the remaining 43 percent. The Army Reserve invested $25M in FY 2014 and is projected to invest $34M in FY 2015 to modernize logistics capabilities through NGREA funding. From FY 2016 to FY 2019, $260M is projected in the base budget to improve modernization levels across logistics capabilities (see Table 2-10 below.)

Table 2-10. Field Logistics Procurement Funding

Procurement Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Base Budget (P-1R)*	$37M	$40M	$63M*	$67M*	$68M*	$62M*
NGREA Investment	$25M	$34M*				

* Projected

Significant challenges impacting readiness and interoperability include shortages and modernization gaps within petroleum delivery and storage capabilities. Unfunded shortages in liquid logistic platforms at the EAB level degrade early-entry and theater-opening storage capacity and bulk distribution to joint forces in a non-permissive environment. Top equipment modernization shortages are listed in Table 2-11 below.

Table 2-11. Field Logistics Critical Equipment Shortages

Equipment	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
Mobile Tactical Retail Refueling System (MTRRS)	732	26	706	96%	$120M
Trailer Tank Bulk Petroleum 7.5K*	480	0	480	100%	$60M
Truck Lift 5K Rough Terrain*	978	248	730	75%	$55M
Load Handling System, 2000 Gal*	475	168	307	65%	$42M
Tractor Yard M878A2	294	89	197	67%	$20M

* Critical Dual Use Equipment

Impacts of Sequestration on Field Logistics:

- Since enactment of BCA, new-start programs are limited to production at a minimum sustainment rate, delaying delivery of modern critical enabler-systems to the Army Reserve.
- No strategy to replace programs of record that exceeded EUL, such as semitrailer fuel tankers.
- Programs are defunded and contracts cancelled prior to filling Army Reserve requirements; examples include materiel handling equipment, maintenance sets, and laundry-bath systems.
- Only 33 percent of Yard Tractor requirements were filled prior to contract termination, forcing the Army Reserve to use an obsolete item as a less than desirable alternative.

Risk: The Army is assuming risk in Field Logistics systems to fund higher priority combat programs. The current fiscal environment forces resourcing decisions leading to tiered procurement of critical EAB logistics capabilities. As such, there is minimal incentive to invest in platforms unique to the Army Reserve. For example, as the executive agent for bulk petroleum distribution and storage, Army has not developed a strategy to replace Army Reserve legacy line-haul fuel distribution systems.

Mitigation: Procurement through COTS provides an affordable and optimal solution for modernizing or filling 7,500 gallon fuel-tank trailer and Yard Tractor shortfalls. Incremental investments in COTS and NDI facilitates accelerated divestment of uneconomically repairable systems. Applying industrial-based modernization standards to like Army systems is necessary to capitalize on cost-saving and avoidance benefits of NDI and COTS solutions. This provides the Army Reserve an affordable opportunity to fulfill unmet requirements used as bill-payers for higher priority programs.

f. Force Protection and Soldier Portfolios

Force protection portfolio consists of Chemical, Biological, Radiological, Nuclear, and High-yield Explosives (CBRNE) Defense, Civil Affairs and Military Information Support Operations (CA/MISO), and Military Police. The Soldier portfolio consists of night vision devices, and individual and crew served weapons.

Investments in New Procurement and Modernization: In FY 2014 and FY 2015 the Army's base budget procurement funding ($57M) accounts for 54 percent of the total Protection and Soldier portfolio investments ($105M), with NGREA funding ($48M) accounting for the remaining 46 percent. The Army Reserve invested $18M in FY 2014 and is projected to invest $30M in FY 2015 to modernize Force Protection and Soldier capabilities through NGREA funding. From FY 2016 to FY 2019, $186M is projected in the base budget to improve modernization levels across this portfolio (see Table 2-12 below.)

Table 2-12. Force Protection and Soldier Procurement Funding

Funding Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Force Protection & Soldier Base Budget (P-1R)	$20M	$37M	$53M*	$38M*	$55M*	$40M*
FP NGREA Investment	$18M	$30M				

* Projected

Reductions of funding in Army Reserve Force Protection programs increases the risk in bio-detection and protection capabilities required to provide responsive support for HD and DSCA missions and limits abilities to bolster force protection posture. The Army Reserve's top critical shortages within the Force Protection and Soldier portfolios are listed in Table 2-13 below.

Table 2-13. Force Protection and Soldier Top Equipment Shortages

Equipment	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
Nuclear Biological Chemical Recon Vehicle (NBCRV)*	96	28	68	88%	$545M
Chemical/Biological Protective Shelter (CBPS)*	108	0	108	100%	$118M
Common Remotely Operated Weapon Station (CROWS)**	1,134	0	1,134	100%	$268M
Rifle 5.56mm: M4A1	144,336	35	144,301	99%	$175M

* Critical Dual Use Items, ** Procured with OCO funding

Impacts of Sequestration on Force Protection and Soldier:

- Due to the fiscal environment, a funding decision was made to procure just 67 percent (64 of 96) of the Army Reserve NBCRV requirement. Additionally, the contract was canceled early without achieving programmed acquisition objectives. As a result, requirements were not fulfilled, leaving the Army Reserve 46 percent short (44 of 64).
- The CBPS is a critical dual-use CBRNE medical shelter widely used in Army Reserve medical units. The Army Reserve's undocumented requirement totals 108.
- Army procurement of CROWS systems is complete; however, unfunded and un-fielded systems are delaying delivery and installation on Army Reserve protection platforms.
- 76 percent (114K of 150K) of carbines are obsolete M16A2 models identified for divestment. Army has a fully-funded strategy to pure fleet to the M4A1 model by FY 2021.

Risk: Early cancellation of procurements disrupts the synchronization and integration of co-dependent systems designed to enhance force protection and survivability. For example, the inability to synchronize fielding of CROWS with associated platforms impacts Soldier training and unit readiness posture.

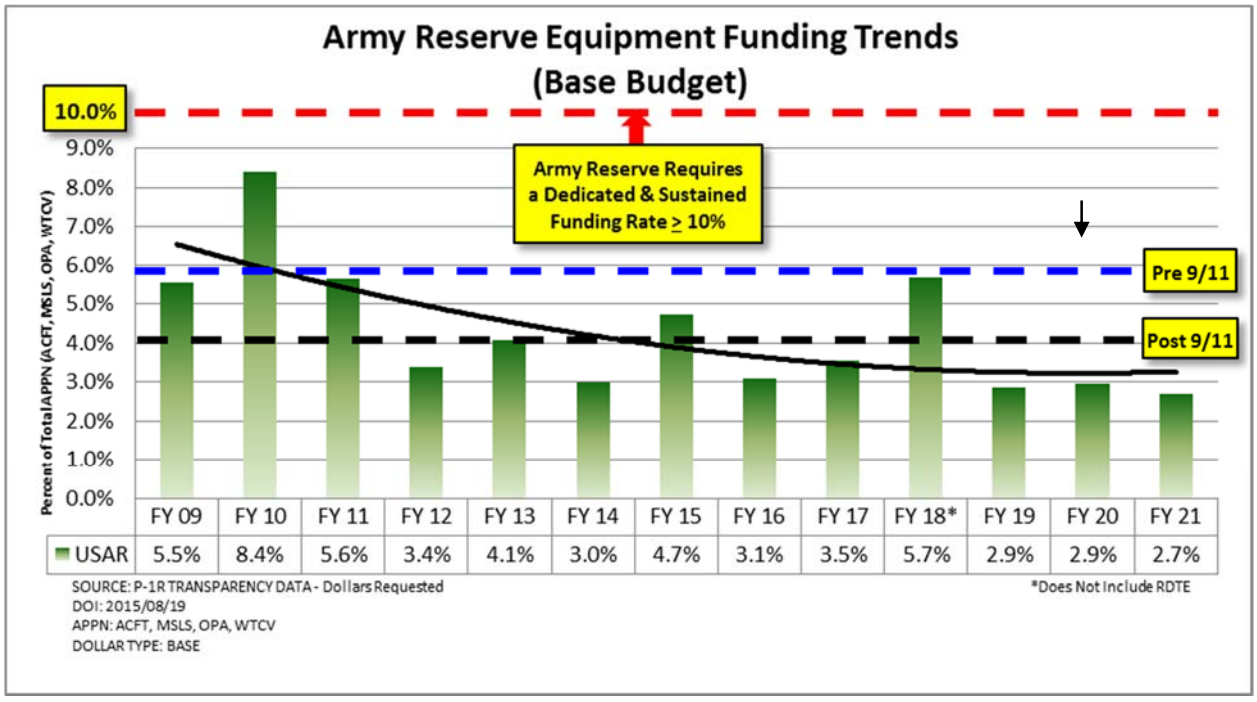
Mitigation: The Army Reserve anticipates redistribution of Active Component excess systems, but requires sustainment funding to accompany equipment transfers. Opportunities to repurpose

modern platforms as an interim solution may exist. For example, excess Stryker platforms offer an affordable alternative to improve modernization of EAB capabilities.

C. Summary

Since September 11, 2001, an ensuing era of persistent conflict and increasing velocity of global instability mandated transforming the Army Reserve from a Cold-War era strategic reserve to an operational force. Transformation included modest gains in modernization primarily with investments through supplemental and OCO funding. Fiscal constraints imposed by BCA risk gains in transforming the Army Reserve. Under BCA, funding levels revert back to pre-9/11 funding levels and lower with President's Budget (P-1R) submissions for modernization and depot maintenance being reduced by 46 percent and 76 percent respectively. From 1991 to 2001, the Army Reserve averaged less than 6 percent of the P-1R submission while serving in a strategic role. In FY 2016, procurement funding equals 3.1 percent of the P-1R with 20 percent of the Total Force in the Army Reserve. Negative funding trends persist as revealed in numerous studies conducted between 2005 and 2015. The 2005 Government Accountability Office (GAO) report, 2008 Commission on the National Guard and Reserve (CNGR), and 2010 Center for New American Security (CNAS) study all conclude the Army Reserve modernization and compatibility suffers from a lack of investment from the base budget. Most recently, a 2015 Office of the Secretary of Defense (OSD) Reserve Component Equipment Transparency study validates previous conclusions by confirming that the base budget does not provide sufficient funding required to sustain the Army Reserve in an operational role. Negative funding trends can be reversed by establishing a dedicated and sustained funding rate greater than or equal to 10 percent of the base budget (minus Research, Development, Test & Evaluation) (see Figure 2-2 below.) Dedicated funding remains essential in sustaining the Army Reserve in an operational role. This ensures the Army Reserve is compatible with joint forces and is compliant with the intent of DOD Total Force Policy while achieving National Defense Strategy objectives.

Figure 2-2. Army Reserve Funding Trends



Annex A
Explanation of Army Reserve Embedded Equipment Tables

Equipment	FY 2019 Required	FY 2019 Modern On-Hand	FY 2019 Modern Shortage	FY 2019 % Modern Unfunded	FY 2019 Unfunded Requirement
Joint Assault Bridge*	102	0	102	100%	$510M

Equipment—General nomenclature of the equipment item.

FY 2019 Required—Based on the forecasted requirement at the end of FY 2019.

FY 2019 On-hand—Based on the forecasted on-hand at the end of FY 2019 (not shown in the table.)

FY 2019 Modern On-hand—Removes equipment considered not modern from the *FY 2019 On-hand* number. Modern equipment is defined as the most current equipment item that meets global mission requirements.

FY 2019 Modern Shortage—*FY 2019 Required* minus *FY 2019 Modern On-hand.*

FY 2019 Unfunded Requirement—Average estimated cost of the equipment multiplied by the *FY 2019 Modern Shortage.*

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Air Defense							
Radio Set: AN/USQ-140(V)2(C)	R42399	$3,766,000	1	1	1	1	6
Center: Communications Operations	C18033	$3,748,800	0	2	2	2	6
Computer: Tactical AN/GYQ-88	C77755	$68,500	5	5	5	5	17
Aircraft							
Helicopter Utility: UH-60A *	K32293	$16,967,644	0	0	0	0	76
Helicopter Utility: UH-60M *	H32429	$17,044,052	0	0	0	0	60
Airplane Cargo Transport: C-12F *	A30062	$3,068,422	8	8	8	8	32
CH-47F Improved Cargo Helicopter *	C15172	$34,035,255	16	17	22	22	24
Utility Cargo Aircraft: UC-35A *	U05004	$7,000,000	9	9	9	9	16
Terminal Video Multifunctional Remote UAS: AN/USQ-210	T81951	$80,000	0	0	0	0	75
Small Unmanned Aircraft System: Raven B	S83835	$21,889	45	45	45	45	108
Airplane, Utility: UC-35B	A05015	$7,000,000	5	5	5	5	0
Airplane Cargo Transport: C-12D	A29812	$1,967,301	4	4	4	4	0
Airplane, Cargo Transport	BA108Q	$2,150,000	8	8	8	8	0
Helicopter Cargo Transport: CH-47D *	H30517	$29,682,872	32	32	32	32	0
Helicopter Utility: UH-60L *	H32361	$16,967,644	63	63	63	63	0
Helicopter: Attack AH-64D	H48918	$18,389,000	24	24	24	24	0
MEDEVAC Helicopter: HH-60M *	M33458	$16,967,644	26	32	32	32	0
HH-60L: MEDEVAC Helicopter	U84291	$16,967,644	5	5	5	5	0
Aviation							
External Stores Subsystem (ESSS): UH-60A	E21985	$676,111	7	7	7	7	136
Warning Receiver System Countermeasure: AN/AAR-58	W62187	$447,800	9	9	9	9	76
Warning Receiver System, Countermeasure	W62437	$447,800	0	0	0	0	60
Warning Receiver System, Countermeasure	W55180	$505,000	0	0	0	0	24
Detecting Set, Laser AN/AVR-2B(V)1	L60482	$229,614	9	9	9	9	60
Warning Receiver System: Countermeasure AN/AAR-57(V)2	W41457	$447,800	8	8	8	8	32
Shelter: Tactical Expandable Oneside	S01291	$224,333	44	44	44	44	86
Kit Aeromedical Evacuation: UH-60A *	K40878	$130,839	0	0	0	0	60
Tool Set Aircraft Maintenance *	T59439	$3,600,000	1	1	1	1	3
Command System: Tactical AN/TSQ-221 *	C61597	$3,000,000	1	1	1	1	3
Air Traffic Control Central: AN/TSW-7A *	A27624	$5,789,000	1	1	1	1	2
Warning Receiver System, Countermeasure: AN/AAR	W62255	$447,800	5	5	5	5	16
Radar Set: AN/TPN-31 *	R17126	$3,701,502	1	1	1	1	2
Communication System: Tactical Terminal Control System (TTCS) *	C59125	$998,000	1	1	1	1	4
Radio Set Personnel Locator: AN/ARS-6(V)2	R85011	$36,000	13	13	13	13	68

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Kit Air Transportability: UH-60A	K27251	$25,600	87	87	87	87	136
Radio Set: High Frequency AN/VRC-100 (V)1	R81691	$70,000	19	19	19	19	32
Battle Command and Control							
Computer Set: Digital AN/UYK-128 *	C18378	$31,172	3,634	3,634	3,634	3,634	6,897
Army Human Resources Workstation *	Z39781	$19,571	889	889	889	889	2,913
Product Distribution: System-Lite	P05015	$127,808	452	464	469	469	708
Computer System: Digital AN/UYQ-90(V)2 *	C18278	$18,932	2,350	2,350	2,350	2,350	3,660
Shelter: Nonexpandable LTWR MP Rigid-Wall S788 mtd HMMWV	S01563	$1,011,652	2	2	2	2	25
Generator Set: DED 5kW 50/60Hz Skid-mtd *	G42488	$19,177	0	0	0	0	1,037
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	$44,157	0	0	0	34	470
Computer System: Digital AN/GYK-61 *	C18448	$69,488	1,141	1,141	1,141	1,141	1,331
Rigid Wall Shelter: Command Post *	R98145	$1,011,652	0	0	0	0	12
Tactical Local Area Network (TACLAN)	T05021	$888,955	2	2	2	2	14
Power Supply: PP-6224/U *	P40750	$4,401	1,783	2,453	2,453	2,453	4,747
LTT Trailer-mtd: PU-2002 10kW 50/60Hz	L84622	$19,177	0	0	0	29	458
Computer System: Digital AN/UYQ-90(V)3 *	C78851	$30,000	535	535	535	535	800
Generator Set: DED 15kW 50/60Hz Skid-mtd	G49966	$23,724	0	0	0	0	267
Utility Receptacle *	U89185	$5,457	1,628	1,628	1,628	1,628	2,691
Media Production Center-Medium	M05012	$1,444,178	4	4	4	4	8
Generator Set: Diesel Engine Trailer PU-807A	G17528	$43,800	126	126	126	126	250
BTUh 60000 Environmental Control Unit: HD-1240/G	B29108	$12,570	348	506	667	693	1,086
Command System Tactical: AN/TYQ-155(V)1 *	C61290	$103,558	123	123	123	123	167
Computer System: Digital AN/PYQ-12	C18641	$64,000	122	122	122	122	184
Generator Set DE 60kWW 50/60Hz: Skid-mtd	G63256	$34,578	0	0	0	0	110
Computer Set: Digital AN/GYK-62 *	C13866	$16,530	248	248	248	248	433
Command System Tactical *	C40996	$1,011,652	6	6	6	6	9
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	$47,007	0	0	0	6	69
Communications Central: AN/ASC-15E *	C59313	$203,525	2	2	2	2	12
Navigation Set: Satellite Signals AN/GSN-13	N96180	$67,088	0	5	14	19	48
Distribution System Elec: 120V 1PH 60amp *	F55553	$10,123	1,089	1,115	1,115	1,115	1,293
Generator Set: Diesel Engine MEP-810B	G17800	$449,397	0	0	0	0	4
Panel Power Distribution: 60Hz 400amp	P60558	$17,711	73	73	73	73	170
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	$41,800	0	0	0	5	39
Fly-away Broadcast System	F05006	$264,390	3	3	3	3	8
LTT Trailer-mtd: PU-2003 15kW 50/60Hz	L84690	$38,518	0	0	0	0	34
Computer Set: Digital OL-603/TYQ	C78827	$16,000	12	12	12	12	83
Air Conditioner 36000 BTUh Horizontal	Z03653	$5,041	0	13	13	13	226
Trailer-mtd: PU-2103 60kW 50/60Hz M200A1	T60034	$47,007	0	0	0	5	26
Computer Set: Digital OL-604/TYQ	C18684	$3,000	7	7	7	7	329
Com A CO S: AN/GYQ-97A	C56327	$65,000	3	3	3	3	14
Switching Unit: Power Transfer	S83291	$57,000	0	0	0	0	12
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	$47,007	0	0	0	0	14

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Print System-Medium: MISO	P05017	$501,500	1	1	1	1	2
Battlespace Awareness							
Workstation Geospatial Intelligence: AN/TYQ-71(V) *	D11498	$443,968	11	11	11	11	44
Central: Communications AN/TSQ-226(V)3 *	C43399	$1,695,937	0	0	0	0	7
Digital Topographic System: AN/TYQ-67(V)	D10281	$1,053,000	5	5	5	5	10
Ground Station Tactical Intelligence: AN/TSQ-179 *	T37036	$4,644,000	0	0	0	0	1
All Source Analysis System: AN/TYQ-92	A53199	$3,200,000	0	0	0	0	1
Battle Command Transport Networks							
Radio Set: AN/VRC-90F(C) *	R68044	$97,565	24,589	24,589	24,589	24,589	28,540
Teleconference System: AN/TYQ-122 *	T43146	$2,472,271	36	36	36	36	125
Radio Set: AN/PSC-5 *	R57606	$97,565	225	225	225	225	2,140
Radio Set: AN/VRC-91F(C) *	R68146	$97,565	2,836	2,836	2,836	2,836	3,926
Terminal: Satellite Communication AN/TSC-155	T81733	$4,411,733	6	6	6	6	22
Radio Set: AN/VRC-92F(C) *	R45543	$97,565	1,868	1,868	1,868	1,868	2,497
Radio Set: AN/PRC-104A	R55200	$97,565	5	5	5	5	512
Radio Set: AN/VRC-89F(C) *	R44999	$97,565	1,451	1,451	1,451	1,451	1,756
Satellite Communication System: AN/TSC-156 *	S23268	$4,000,000	24	24	24	24	30
Multiband Handheld Tactical Radio (Urban) *	M18029	$7,700	27	27	27	27	1,680
Computer System Digital: AN/PYQ-10(C) *	C05002	$2,000	20,039	20,039	20,039	20,039	26,399
Receive Suite: AN/TSR-8 *	R30658	$266,332	4	4	4	4	47
Radio Set: Hand-held Radio *	Z01320	$7,700	3,700	3,700	3,700	3,700	5,022
Joint Node Network (JNN) Central Office Telephone Auto *	J05001	$2,472,271	28	28	28	28	32
Computer System: Digital AN/PSQ-17 *	C18380	$394,827	0	0	0	0	23
Radio Terminal Set: AN/TRC-170 (V)3	R93035	$2,233,375	16	16	16	16	20
Frequency Hoping Multiplex: TD-1456VRC	F99520	$88,007	16	16	16	16	98
Radio Set: AN/VSQ-2D(V)1	P49587	$50,250	1	1	1	1	102
Radio Terminal: Line of Sight Multi-channel AN/TRC-190E(V)1 *	R90451	$2,472,271	136	136	136	136	138
Radio Terminal: Line of Sight Multi-channel AN/TRC-190F(V)3 *	R90587	$2,472,271	60	60	60	60	62
Radio Set: AN/PRC-119F(C) *	R83141	$97,565	977	977	977	977	1,025
Radio Set: AN/PRQ-7 *	R31430	$18,828	645	645	645	645	852
Encryption-Decryption Equipment: KGV-72	E05008	$1,905	1,938	1,938	1,938	1,938	3,935
Radio Test Set: AN/GRM-122 *	R36178	$108,000	73	73	73	73	104
Installation Kit: MK-2324/ASC-15B	J31656	$119,982	0	0	0	0	12
Key Processor KP TSEC/KOK-22A	K05001	$18,100	1	1	1	1	61
Interface Unit: Automatic Data Processing J-6577/USD	J46424	$500,000	0	0	0	0	2
Computer Group: Tactical OL-783(V)3/T	C05044	$573,557	1	1	1	1	2
Combat Mobility							
Bridge Armored Vehicle Launched Scissors: 63-ft (AVLB) MLC 70 *	B31098	$7,645,450	42	42	42	42	102
Detecting Set: Mine AN/PSS-15	D03932	$24,641	943	943	943	943	2,720
Urban Operations: Platoon Kit	U88092	$175,445	27	27	34	40	234
Instrument Set Reconnaissance and Surveying: AN/TKQ-6	D17191	$106,040	109	155	210	256	453

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Loader Skid Steer: Type III	L77215	$328,201	438	438	438	438	495
Tool Kit: Urban Ops	T30195	$77,049	59	59	82	108	305
Bridge Fixed: Highway Alum UK Medium Girder Bridge 100-ft LG CL60 *	C22811	$1,869,741	1	1	1	1	8
Medium Mine Protected Vehicle (MMPV) Type II	Z05225	$350,000	0	133	163	229	264
Boat: Bridge Erection	B05006	$550,000	0	14	24	24	42
Man Transportable Robotic System (MTRS-RC)	Z01251	$143,000	0	0	8	20	72
Firing Device: Demolition	F91278	$67,488	0	0	0	0	88
Bridge Erection Set Fixed Bridge: UK Medium Girder Bridge	C22126	$1,869,741	1	1	1	1	4
Reinforcement Set: Medium-Girder Bridge *	C27309	$1,869,741	1	1	1	1	4
Tool Kit Pioneer Engineer Squad: Land CLR & Bldg Erection *	W48348	$9,238	213	213	213	213	696
Anti-Personnel Mine Clearing System: Remote Control (M160)	A05002	$2,141,791	0	6	14	22	24
Loader Scoop Type: DSL 2-1/2 cu-yd Hinge Frame w/Multipurpose Bucket *	L76556	$141,500	2	2	2	2	27
Roller: Mine Clearing	R19752	$75,264	0	0	0	0	36
Tool Kit Pioneer Engineer Combat Platoon: Tools for Manual Labor *	W48074	$13,934	107	107	107	107	293
Tractor Wheeled: DSL 4X4 w/Excavator & Front Loader *	T34437	$328,201	6	6	6	6	13
Tractor FT HS: Armored Combat Earthmover (ACE) *	W76473	$887,050	66	66	66	66	68
Supplementary Set Bridge	U60216	$90,852	0	0	0	0	18
Mine Resistant Vehicle	M74226	$540,000	0	0	0	0	2
Auger Earth Boom-mtd: HYD Small Emplacement Excavator (SEE)	A02812	$328,201	3	3	3	3	6
Transporter Common Bridge *	T91308	$302,274	502	502	502	502	504
Field Logistics							
Fuel System Supply Point: Type 4 300K	F04966	$1,320,650	63	63	96	96	150
Force Provider Module: Houses 550 Soldiers Transportable	F28973	$11,614,850	0	0	0	0	6
Rough Terrain Container Handler: Kalmar RT240 *	R16611	$868,103	276	276	276	276	332
Shower: Portable 12 Head *	S62898	$1,200,000	100	100	100	100	140
Load Handling System: 2000-gal Water Tank-Rack (HIPPO) *	T32629	$151,958	50	80	127	172	438
Trailer Tank Water: 400-gal 1.5-ton 2-wheel *	W98825	$85,825	974	974	974	974	1,348
Hoseline Outfit Fuel Handling: 4-in Diameter Hose	K54707	$473,736	39	39	39	39	76
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd *	W47225	$455,871	28	28	28	28	66
Tractor Wheeled Ind: DED 4X4 w/Forklift & Crane Att (HMMH)	T33786	$93,202	0	0	0	0	173
Fuel System Supply Point: 800K	F05034	$1,320,650	0	0	0	0	12
Laundry Advanced System (LADS): Trailer-mtd *	L70538	$1,022,444	96	96	96	96	108
Shelter: Tactical Expandable Two side *	S01359	$223,222	63	63	63	63	111
Tank and Pump Unit Liquid Dispensing Truck mounting *	V12141	$96,549	723	723	723	723	826
Shop Set Small Arms: Field Maintenance Basic Less Power	W51499	$345,000	32	32	32	32	60
Petroleum Quality Analysis System: Enhanced	P25743	$1,513,000	24	24	24	24	30
Truck Tractor Yard: 46000 GVW 4X3	T60353	$96,051	87	87	87	87	180
Heater: Duct Type Portable 1200-00 BTUs	H00586	$20,959	965	965	965	965	1,353
Electronic Shop Shelter-mtd Avionics: AN/ASM-146 *	H01907	$139,321	94	118	121	121	179
Shop Equipment Auto Maint/Repair: OM Common No 1	W32593	$285,591	3	3	3	3	31

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Hydraulic System Test/Repair Unit (MX3)	H05002	$86,547	90	93	96	101	188
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	$98,681	509	509	509	509	578
Maintenance Support Device *	T92889	$14,376	3,362	3,591	3,739	3,804	4,238
Pump Centrifuge: DED Skid-mtd 6-in 800 gpm 1800-ft HD	P93102	$50,478	0	0	0	0	120
Light Capability Rough Terrain Forklift (LCRTF): 5K	L05010	$98,681	69	69	134	199	250
Kitchen Field Trailer-mtd: mtd on M103A3 Trailer *	L28351	$351,688	582	582	582	582	595
Assault Kitchen *	A94943	$57,963	71	71	71	71	149
Sanitation Center: Food *	S33399	$50,936	399	399	399	399	479
Water Storage/Distribution Set: 40000 gpd (Brigade) *	W55968	$121,746	0	0	0	0	33
Dolly Set Lift Transportable Shelter: 7.5-ton *	D34883	$28,772	184	184	184	184	286
Containerized Batch Laundry (CBL)	C28019	$161,835	14	14	14	14	32
Conveyor Belt: Portable Driving Unit Elec	F06972	$8,352	54	54	54	54	308
Modular Fuel System-Tank Rack Module with Retail Capability	T20131	$127,167	0	0	0	0	16
Petroleum Quality Analysis System	P25493	$1,598,846	0	0	0	0	1
Generator Signal: SG-1366	G05005	$31,190	59	59	59	59	95
Welding Shop Trailer-mtd	Y48323	$9,603	1	1	1	1	96
Container Cargo: Reusable wo/Mechanical Restraint System	C13825	$5,457	743	743	743	743	897
Tank Unit Liquid Dispensing Trailer Mounting *	V19950	$2,000	202	202	202	202	609
Electronic Shop Shelter-mtd Avionics: AN/ASM-147 *	H01912	$82,000	30	30	30	30	39
Test Set: Radar TS-4530A/UPM	T99847	$19,826	12	12	12	12	48
Cleaner Ultrasonic: 120/230V 50/60Hz 23.75X17.75X31 in 18-gal	C32671	$8,996	10	12	18	24	96
Test Set Radio Frequency Power: AN/USM-491	T89944	$9,075	33	33	33	33	101
Force Protection							
Nuclear Biological Chemical Recon Vehicle (NBCRV) *	N96543	$8,024,127	28	28	28	28	96
Mask Chem-Bio Joint Service General Purpose: Field M51	M12986	$400	8,259	8,259	8,259	8,259	127,253
Alarm Chemical Agent Automatic: Remote Sensing XM21	A32638	$173,447	7	7	7	7	96
Alarm Chemical Agent Automatic: M22	A33020	$5,996	68	68	68	68	720
Collective Protection Equipment: NBC Simplified M20 *	C79000	$19,000	883	883	883	883	1,080
Lighting Kit Motion Detector (LKMD) AN/GAR-2	L02015	$5,860	1,543	1,543	1,543	1,543	1,950
Discharger: Grenade Smoke Countermeasure Lightweight M7	D15345	$3,310	3,764	3,764	3,764	3,764	4,480
Installation Kit: Grenade Launcher Smoke up Armored HMMWV 4-M7	J33315	$2,891	383	383	383	383	1,118
Mask Chem-Bio Joint Service General Purpose: Combat Vehicle CRWMN M51	M13236	$400	188	188	188	188	4,507
Battlefield Anti-Intrusion System: AN/PRS-9	B57077	$23,289	602	602	602	602	657
Radiac Set: AN/UDR-13 *	R31061	$1,448	9,925	9,925	9,925	9,925	10,569
Joint Biological Agent Identification Diagnostic System	J00447	$26,652	6	6	6	6	35
General Engineering							
Compressor Unit: Trailer-mtd 250-cfm 100-psi	E72804	$180,850	271	271	271	271	406
Excavator: Hydraulic Type I Multipurpose Crawler Mount *	E27792	$354,259	63	70	71	73	109
Scraper Elevating: SP 8-11 cu-yd Non-Sectionalized *	S29971	$714,285	0	0	0	0	14
Hydraulic Electric Pneumatic Petroleum Operated Equip (HEPPOE)	H05004	$180,850	88	95	105	119	151

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Tool Kit Mason & Concrete Finishers: Brick Stone & Concrete	W44923	$21,047	97	97	97	97	342
Tractor Full Tracked Low Speed: DSL MED DBP w/Buldoz & Scarif Winch *	W76816	$316,096	122	122	122	122	138
Tractor Full Tracked Low Speed: T9 Type II w/Ripper	T05016	$316,096	102	102	102	102	114
Tool Kit Electricians: Set No 1	W36977	$11,470	106	106	106	106	358
Distributor Water: Self Propelled 2500-gal Sectionalized	D28804	$504,230	10	10	10	10	14
Tractor FT HS: Deployable LT Engineer (Deuce) *	T76541	$398,000	9	9	9	9	14
Tool Kit Carpenters: Engineer Platoon w/Chest	W34511	$15,000	140	140	140	140	234
Motorized Grader *	M05001	$277,000	151	151	151	151	155
Tractor Full Tracked Low Speed: T9	T05015	$316,096	129	129	129	129	132
Mixer Concrete Module: PLS 2600-gal	M81382	$127,160	32	32	32	32	39
Roller Motorized: Vibratory Roller Type II *	R11127	$88,000	110	110	110	110	120
Surveying Instrument: Elec Distance Measurement Short Range Infrared AIS	S03726	$55,000	84	84	84	84	99
Tool Kit Pipefitters: 1/8 to 2 in Pipe	W48622	$3,058	197	197	197	197	446
Crane Wheel-mtd: Hydraulic Light 7.5-ton w/Cab *	C36151	$165,922	23	23	23	23	27
Vibratory Plate Compactor	Z05108	$5,500	42	42	42	42	158
Tool Kit Pipe Cutting Grooving & Beveling: 6,8,10 & 12in Pipe	W48485	$69,282	27	27	27	27	36
Maneuver Combat Vehicles							
Carrier Personnel Full Tracked: Armored (RISE)	C18234	$511,343	286	286	286	286	349
Maneuver Systems							
Drivers Enhancers: AN/VAS-5 *	D41659	$64,965	76	76	76	76	736
Night Sight Equipment: TOW 2	N04982	$725,000	0	0	0	0	1
Launcher Grenade Armament Subsystem: M257	L44031	$1,813	267	267	267	267	645
Medical Field Systems							
Tent: Extendable Modular 64Lx20W Medical Forest Green Type II	T47745	$432,000	64	64	64	64	322
Medical Materiel Set Intermediate Care Ward	M08599	$203,649	43	43	43	43	160
Computer Set: Digital AN/TYQ-106(V)1	C18345	$12,461	610	766	1,391	1,843	3,697
Medical Materiel Set Central Materiel Service	M08417	$855,010	29	29	29	29	48
Computer Set: Digital AN/TYQ-107(V)1	C18277	$16,291	296	452	745	1,081	1,757
Medical Materiel Set Operating Room	M72936	$497,155	26	26	26	26	48
Medical Materiel Set Post-Op/ICU Ward	M09576	$331,047	31	31	31	31	64
X-Ray Apparatus: Low Capacity Port *	X90968	$150,000	17	17	17	17	81
Pump Intravenous Infusion PIV	P16161	$7,408	514	646	784	848	1,968
Ventilator Volume Portable *	V99788	$12,120	188	198	266	342	912
Monitor Patient Vital Signs	M66626	$18,000	438	438	536	639	998
Medical Materiel Set Medical Supply: 164 Bed CSH Co	M14585	$450,000	2	2	2	2	16
Fluid Warming System (FWS)	F81245	$28,984	106	132	159	164	332
Dental Materiel Set Oral: Maxillofacial Surgery	D65925	$335,526	2	2	2	2	16
Medical Filmless Imaging System	M30817	$150,000	18	18	18	18	49
Defibrillator Monitor Recorder: 120/230V 50/60Hz AC or DC *	D86072	$19,000	144	149	151	153	361
Medical Materiel Set X-Ray Radiographic Fluoroscopic	M72300	$281,240	2	2	2	2	16
Computer Set: Digital AN/TYQ-107(V)2	C18209	$17,807	34	34	129	265	450

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Monitor Patient Vital Signs	M66558	$18,000	190	216	243	249	428
Medical Materiel Set X-Ray Radiographic	M86675	$203,223	2	2	2	2	16
Waste Water Management Set Hospital: MRI 84 Bed	W49853	$212,000	3	3	3	3	16
Medical Materiel Set Central Materiel Svc Spec Aug: 164 Bed CSH Co	M08951	$157,000	2	2	2	2	16
Water Distribution Connect Set	W53623	$81,000	5	5	5	5	32
Medical Materiel Set Orthopedic Cast Clinic: Deployable Med	M72868	$76,542	4	4	4	4	32
Medical Materiel Set Lab (Liquid Blood Bank): 164 Bed CSH Co	M08849	$151,000	2	2	2	2	16
Medical Materiel Set Lab (General): 164 Bed CSH Co	M13275	$151,000	2	2	2	2	16
Computer System: Digital AN/TYQ-105(V)1	C27503	$2,610	1,223	1,368	1,378	1,603	2,369
Medical Equipment Set Chemical Agent Patient Treatment *	M23673	$28,097	113	123	123	123	194
Medical Materiel Set Pharmacy: 84 Bed CSH Co	M73254	$152,915	4	4	4	4	16
Dental Filmless Imaging System (DFIS)	D44302	$38,749	95	95	95	95	141
Medical Materiel Set Central Materiel Svc Spec Aug: 84 Bed CSH Co	M13428	$136,000	4	4	4	4	16
Anesthesia Apparatus Field	A63297	$33,904	30	32	40	48	96
Tent: Extendable Modular 64Lx20W Surgical Forest Green Type VII	T47813	$26,978	52	52	52	52	112
Tent: Extendable Modular 16Lx20W Medical Forest Green Type V	T71619	$16,000	27	27	27	27	128
Ultrasound Unit Diagnostic Veterinary (USUDV)	U05009	$56,491	45	45	45	45	72
Sterilizer Surgical Dressing: Pressure Fuel HTD CRS 16X36 in	S39122	$40,000	146	154	154	154	192
Computerized Tomography Scanner Field	C79284	$749,275	0	0	0	2	4
Medical Materiel Set Pharmacy: 164 Bed CSH Co	M73186	$106,110	2	2	2	2	16
Medical Materiel Set Triage/Emergency/Pre-Op	M73050	$440,645	29	29	29	29	32
X-Ray Apparatus: High Capacity Radiographic & Fluoroscopic	X92158	$145,179	3	3	5	7	16
Water Distribution Set Hospital: MRI 84 Bed	W53123	$95,000	3	3	3	3	16
Computer System: Digital AN/TYQ-108(V)3	C27639	$30,207	41	52	85	122	161
Medical Materiel Set X-Ray Low Capacity Portable	M73175	$38,620	4	4	4	4	32
X-Ray Apparatus Radiographic Medical	X92545	$97,944	3	3	4	5	16
Veterinary Equipment Set Detachment: 50 Patient Small Animal	M30136	$170,638	6	6	6	6	12
Soldier Systems							
Armament Subsystem: Remotely Operated	A90594	$236,751	0	0	0	0	971
Night Vision Goggle: PVS-7	N05482	$3,475	12,675	12,675	12,675	12,675	71,894
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-7	M74849	$43,128	29	29	29	29	924
Target Locator Module	T27471	$43,128	806	806	806	806	999
Mount Gun: Ring Caliber .50	M74364	$6,311	3,077	3,077	3,077	3,077	4,052
Sight Bore Optical: M150 *	S45729	$1,120	20,662	20,662	20,662	20,662	24,482
Binocular: M25 *	B67907	$6,622	1,402	1,402	1,402	1,402	1,922
Unmanned Ground Vehicle Tracked: XM216	U31832	$289,504	0	0	0	0	10
Sight: Reflex Collimator *	S60288	$1,642	97,575	97,575	97,575	97,575	99,152
Mount Machine Gun: 40mm MK93	M12647	$2,165	6,120	6,120	6,120	6,120	7,067
Laser: Target Locator Module	L05003	$48,533	43	43	43	43	77

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Parachute: Personnel	P68275	$7,384	0	0	0	0	199
Mounting Kit: F/M548A1	M18293	$50,000	41	41	41	41	68
Soldier Weapons							
Machine Gun: Caliber .50	M39331	$15,000	754	754	754	754	4,630
Launcher Grenade: M320A1 *	L69080	$4,876	2,243	2,243	2,243	2,243	7,425
Machine Gun: 7.62mm M240B	M92841	$14,404	5,515	5,515	5,515	5,515	6,399
Machine Gun Grenade 40mm: MK19 Mod III	M92362	$17,085	2,155	2,155	2,155	2,155	2,590
Machine Gun: Caliber .50 Heavy Fixed Turret Type	L91701	$15,259	275	275	275	275	645
Machine Gun: Light 5.56mm M249	M39263	$4,298	2,562	2,562	2,562	2,562	3,443
Machine Gun: 7.62mm M240L	M92454	$14,404	97	97	97	97	184
Strike							
Howitzer Light Towed: 105mm	K57392	$1,400,000	0	0	0	0	3
Support Systems							
Container Handling Unit	C27294	$42,249	616	616	616	616	1,577
Container Handling: Container Handling Unit (CHU) *	C84862	$42,249	55	55	55	55	306
Crane Barge: 89 to 250 ton	F36090	$8,000,104	2	2	2	2	3
Parachute Cargo: 100-ft Diameter G-11B Vent Control System	N66560	$9,661	1,723	1,723	1,723	1,723	2,430
Parachute Cargo: 64-ft G12E (IHLCADS)	P66486	$4,176	1,723	1,723	1,723	1,723	2,736
Outboard Motor Gasoline: 25-40 bhp	N34334	$22,540	12	12	12	12	90
X-Ray Apparatus: Radiographic Industrial	X91036	$96,473	3	3	3	3	18
Parachute Cargo: Ringslot 26-ft Diameter 2200-lb Cap	N67206	$1,010	168	168	168	168	1,536
Release Cargo Parachute: Airdrop M-1	R71258	$1,432	332	332	332	332	857
Trailers							
Semitrailer Low Bed: 70-ton HET	S70859	$610,664	411	411	411	411	480
Semitrailer Low Bed: 40-ton 6-wheel W/E *	S70594	$145,247	651	651	651	651	843
Semitrailer Tank: Petroleum 7500-gal Bulk Haul *	S73119	$198,020	396	396	396	396	480
Semitrailer Flatbed: Breakbulk/Container Transporter 34-ton *	S70159	$70,787	1,577	1,577	1,577	1,577	1,680
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload *	S10059	$146,093	1,031	1,031	1,031	1,031	1,080
Trailer Cargo: High Mobility 1-1/4 ton *	T95924	$9,615	2,177	2,177	2,177	2,177	2,682
Trucks							
Armored Security Vehicle (ASV): Wheeled w/Mount *	A93374	$1,019,000	318	318	318	318	645
Truck Cargo: Tactical 8X8 Heavy Expanded Mobility w/LHS *	T96496	$367,575	73	73	73	73	432
Truck Utility: Expanded Capacity, Up-armored HMMWV *	T92446	$129,376	133	133	133	133	1,020
Truck Cargo: Heavy PLS Transporter 15-16.5 ton 10X10 *	T40999	$1,075,209	1,067	1,067	1,067	1,067	1,173
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	$153,760	461	461	461	461	835
Truck Cargo: MTV W/E W/W *	T41135	$255,952	73	73	73	73	220
Truck Cargo: M985A4	T59380	$342,365	39	39	39	39	120
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	$397,000	301	301	301	301	366
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	$212,000	1,261	1,261	1,261	1,261	1,380
Truck Cargo: 5-ton wo/Winch *	T41515	$255,952	2,454	2,466	2,502	2,518	2,616
Truck: Palletized Loading System (PLS)	T81874	$418,000	667	714	741	741	792
Truck Dump: 20-ton DED 12 cu-yd Cap (CCE) *	X44403	$211,764	230	230	230	230	326

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Truck Wrecker: Tactical 8X8 Heavy Expanded Mobility w/Winch *	T63093	$886,000	194	194	194	194	214
Truck Dump: 10-ton wo/Winch *	T65342	$242,585	524	532	556	566	628
Truck: Expandable Van wo/Winch *	T67136	$372,440	215	226	246	261	299
Truck Palletized (LHS): M1120A4 *	T55054	$367,575	743	743	743	743	780
Truck Tractor: Heavy Equipment Transporter (HET)	T59048	$461,970	166	166	166	166	192
Truck Tank: Fuel Servicing 2500-gal 8X8 Heavy Expanded Mobility *	T87243	$499,182	116	116	116	116	138
Truck Van: M1079A1P2 wo/Winch *	T62359	$232,284	174	174	174	174	201
Truck Dump FMTV: 10-ton *	T65047	$242,585	0	0	0	0	24
Truck Cargo: wo/Winch *	T59448	$157,982	1,535	1,535	1,535	1,535	1,570
Truck Tank: wo/Winch *	T58318	$499,182	165	165	165	165	174
Truck Tractor: MTV W/E *	T61239	$242,669	396	396	396	396	413
Watercraft							
Barge Deck or Liquid Cargo: Nonprop	B31197	$335,580	0	0	0	0	3
Platform: Container Roll-In/Roll-Out *	B83002	$25,097	8,988	8,988	8,988	8,988	13,518
Crane Barge: 89 to 250 ton	F36090	$8,000,104	2	2	2	2	3
Landing Craft Mechanized: 69-ft *	L36739	$174,650	8	8	8	8	8
Landing Craft Utility: RORO 245 to 300 ft	L36989	$5,000,000	7	8	8	10	7
Landing Craft Mechanized: Mod2 *	L36654	$1,700,000	1	1	1	1	1
Tug: Large Coastal and Inland Waterway Diesel	T68330	$12,500,000	2	2	2	2	3
Tug: Small 900 Class *	T68398	$3,600,000	6	6	6	6	6
Vessel Logistic Support: 245 to 300 ft length	V00426	$11,033,333	3	3	3	3	3

1. "*" indicates a Critical Dual Use (CDU) equipment item

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Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature[1]	Equip No.	Average Age	Remarks
Aircraft			
Airplane, Utility: UC-35B	A05015	14	
CH-47F Improved Cargo Helicopter *	C15172	4	
Helicopter Cargo Transport: CH-47D *	H30517	26	
Helicopter Utility: UH-60L *	H32361	22	
Helicopter: Attack AH-64D	H48918	15	
HH-60L: MEDEVAC Helicopter	U84291	11	
MEDEVAC Helicopter: HH-60M *	M33458	6	
Utility Cargo Aircraft: UC-35A *	U05004	18	
Combat Mobility			
Loader Scoop Type: DSL 2-1/2 cu-yd Hinge Frame w/Multipurpose Bucket *	L76556	30	
Tractor Wheeled: DSL 4X4 w/Excavator & Front Loader *	T34437	26	
Transporter Common Bridge *	T91308	15	
Field Logistics			
Dolly Set Lift Transportable Shelter: 7 1/2 ton *	D34883	17	
Electronic Shop Shelter-mtd Avionics: AN/ASM-146 *	H01907	11	
Electronic Shop Shelter-mtd Avionics: AN/ASM-147 *	H01912	11	
Kitchen Field Trailer-mtd: Mtd on M103A3 Trailer *	L28351	25	
Tank and Pump Unit Liquid Dispensing Truck mounting *	V12141	21	
Tank Unit Liquid Dispensing Trailer Mounting *	V19950	29	
Tractor Wheeled Ind: DED 4X4 w/Forklift & Crane Att (HMMH)	T33786	26	
Trailer Tank Water: 400-gal 1.5 ton 2-wheel *	W98825	23	
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	30	
Truck Tractor Yard: 46000 GVW 4X2	T60353	18	
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd *	W47225	23	
General Engineering			
Compressor Unit: Trailer-mtd 250-cfm 100-psi	E72804	29	
Crane Wheel-mtd: Hydraulic Light 7.5-ton w/Cab *	C36151	25	
Distributor Water: Self Propelled 2500-gal Sectionalized	D28804	9	
Tractor FT HS: Deployable LT Engineer (Deuce) *	T76541	16	
Tractor Full Tracked Low Speed: DSL MED DBP w/Buldoz & Scarif Winch *	W76816	34	
Maneuver Combat Vehicles			
Carrier Personnel Full Tracked: Armored (RISE)	C18234	31	
Trailers			
Semitrailer Flatbed: Breakbulk/Container Transporter 34-ton *	S70159	24	
Semitrailer Low Bed: 40-ton 6-wheel W/E *	S70594	27	
Semitrailer Low Bed: 70-ton HET	S70859	18	
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload *	S10059	21	
Semitrailer Tank: Petroleum 7500-gal Bulk Haul *	S73119	24	

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Table 2

Average Age of Equipment

Nomenclature[1]	Equip No.	Average Age	Remarks
Trailer Cargo: High Mobility 1-1/4 ton *	T95924	7	
Trucks			
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	27	
Truck Cargo: Heavy PLS Transporter 15-16.5 Ton 10X10 *	T40999	13	
Truck Cargo: MTV W/E W/W *	T41135	10	
Truck Dump: 20-ton DED 12 cu-yd Cap (CCE) *	X44403	18	
Truck Tank: Fuel Servicing 2500-gal 8X8 Heavy Expanded Mob *	T87243	24	
Truck Tractor: Heavy Equipment Transporter (HET)	T59048	21	
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	15	
Truck Tractor: MTV W/E *	T61239	11	
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	23	
Truck Wrecker: Tactical 8X8 Heavy Expanded Mobility w/Winch *	T63093	20	
Watercraft			
Crane Barge: 89 to 250-ton	F36090	20	
Landing Craft Mechanized: 69-ft *	L36739	15	
Landing Craft Utility: RORO 245 to 300 ft	L36989	23	
Tug: Large Coastal and Inland Waterway Diesel	T68330	22	
Vessel Logistic Support: 245 to 300 ft length	V00426	28	
1. "*" indicates a Critical Dual Use (CDU) equipment item			

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Table 3

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Aircraft			
RQ-11 (Raven)		$698,000	$712,000
CH-47 Helicopter		450,525,000	
Modification of Aircraft			
Utility/Cargo Airplane Modifications	$5,052,000		5,521,000
Network and Mission Plan	2,990,000	5,578,000	5,782,000
Communications, Navigation, and Surveillance	3,997,000	4,722,000	4,282,000
Global Air Traffic Management (GATM) Rollup	2,825,000	3,062,000	1,490,000
Support Equipment and Facilities			
Common Ground Equipment	1,547,000	1,900,000	1,512,000
Weapons and Tracked Combat Vehicles (WTCV)			
Joint Assault Bridge		33,760,000	58,107,000
XM320 Grenade Launcher Module (GLM)			
Carbine	15,292,000	17,111,000	20,374,000
Handgun		666,000	3,194,000
M4 Carbine Modifications	1,248,000	1,265,000	1,282,000
M2 .50 cal Machine Gun Modifications	14,360,000	10,000,000	
Tactical and Support Vehicles			
Tactical Trailers/Dolly Sets		3,243,000	3,062,000
Truck, Dump, 20-ton (CCE)			600,000
Family of Medium Tactical Vehicles (FMTV)	6,743,000	35,119,000	29,246,000
Family of Heavy Tactical Vehicles (FHTV)			
Palletized Load System (PLS) Extended Service Program (ESP)	3,364,000		
Modification of In-service Equipment	71,876,000	38,454,000	48,019,000
Communications and Electronics Equipment			
Warfighter Information Network-Tactical (WIN-T) - Ground Forces Tactical Network	3,480,000		
Signal Modernization Program		9,505,000	
SMART-T (Space)	2,300,000		
Spider Apla Remote Control Unit		1,000,000	
Family of Medical Communications for Combat Casualty Care	11,221,000	11,356,000	10,069,000
Army Civil Affairs (CA)/Military Information Support Operations (MISO) GPF Equipment	1,500,000	1,500,000	1,500,000
Communications Security (COMSEC)	5,303,000	2,068,000	2,063,000
Distributed Common Ground System - Army (DCGS-A) (MIP)	4,665,000	4,665,000	4,665,000
Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) (MIP)	589,000	438,000	681,000
Joint Battle Command - Platform (JBC-P)	12,340,000	11,670,000	11,820,000
Air & Missile Defense Planning and Control System (AMDPCS)			
Network Management Initialization and Service	1,208,000	1,736,000	1,642,000
Maneuver Control System (MCS)	45,631,000	6,827,000	14,323,000
Global Combat Support System - Army (GCSS-A)	41,014,000	7,880,000	

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Table 3

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2017	FY 2018	FY 2019
Reconnaissance and Surveying Instrument Set	4,000,000	4,665,000	4,000,000
Reserve Component Automation System (RCAS)	9,568,000	10,514,000	11,291,000
Tactical Digital Media		1,000,000	1,328,000
Items less than $5M (Surveying Equipment)	660,000	1,000,000	677,000
Other Support Equipment			
Protective Systems	496,000	399,000	423,000
Family of Non-Lethal Equipment (FNLE)	1,241,000	1,752,000	2,258,000
Base Defense Systems (BDS)			2,212,000
CBRN Defense	4,569,000	2,687,000	7,355,000
Tactical Bridging			6,292,000
Tactical Bridge - Float Ribbon	12,827,000	8,420,000	5,000,000
Ground Standoff Minefield Detection System (GSTAMIDS)	1,194,000	7,500,000	7,400,000
Robotic Combat Support System (RCSS)	996,000	1,000,000	1,250,000
Robotics and Applique Systems			1,770,000
Remote Demolition Systems	1,115,000		
Items Less Than $5M (Countermine Equipment)			800,000
Family of Boats and Motors	164,000	364,000	716,000
Heaters and Environmental Control Units (ECUs)	2,528,000	1,257,000	1,250,000
Cargo Aerial Delivery & Personnel Parachute System	2,219,000		
Family of Engineer Combat and Construction Sets	6,434,000	5,986,000	3,495,000
Distribution Systems, Petroleum & Water	4,686,000	5,493,000	6,498,000
Combat Support Medical	10,395,000	10,973,000	7,672,000
Mobile Maintenance Equipment Systems	4,713,000	3,439,000	5,268,000
Items Less Than $5M (Maintenance Equipment)	31,000	142,000	649,000
Scrapers, Earthmoving	11,802,000	8,016,000	
Hydraulic Excavator	568,000	2,500,000	
All Terrain Cranes	4,720,000	3,614,000	6,468,000
High Mobility Engineer Excavator (HMEE)	588,000	666,000	
Enhanced Rapid Airfield Construction Capability	844,000	1,190,000	1,000,000
Construction Equipment ESP	12,323,000	11,516,000	13,535,000
Items Less Than $5M (Construction Equipment)	1,231,000	3,402,000	3,807,000
Army Watercraft ESP	11,063,000		20,413,000
Generators and Associated Equipment	29,331,000	27,848,000	24,401,000
Family of Forklifts		6,939,000	7,075,000
Training Devices, Nonsystem	8,881,000	17,193,000	9,885,000
Close Combat Tactical Trainer		58,000	2,304,000
Aviation Combined Arms Tactical Trainer	5,539,000	5,484,000	5,989,000
Gaming Technology in Support of Army Training	2,393,000	3,563,000	5,044,000
Integrated Family of Test Equipment (IFTE)	2,651,000	1,176,000	2,190,000
Test Equipment Modernization (TEMOD)	1,284,000	1,998,000	2,173,000
Modification of In-service Equipment (OPA-3)	1,818,000	1,395,000	1,376,000
Total	**$421,417,000**	**$827,897,000**	**$413,210,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Command and Control Systems			
Engineer Command and Control (C2) (ENFIRE)	$12,932,476		
Command and Control (C2) Rapid Deployable Vehicle	10,689,350		
Engineer			
Urban Ops Platoon Support Equipment	8,853,024		
Urban Ops Squad Support Equipment	4,517,747		
Hydraulic System Test and Repair Unit	7,528,066		
Mixer, Concrete	6,996,385		
Global Positioning System - Survey	3,158,647		
Field Logistics			
Truck Lift Fork, 5000lb Rough Terrain	11,960,000		
Modular Fuel System-Tank Rack	546,000		
Tactical Wheeled Vehicles			
Palletized Loading System Modernization	27,062,638		
HEMTT Load Handling System (LHS) Modernization	17,354,475		
HEMTT Cargo (M985A4) Modernization	16,592,937		
HMMWV Ambulance	13,300,000		
Truck, CST Response (4x4)	2,345,000		
Tactical Operations Center (TOC) Trailer, Tandem Axle	175,000		
Cargo Trailer, Tandem Axle (15' 2")	100,000		
Medical Response Vehicle	100,000		
Utility Trailer, Tandem Axle	50,000		
Force Protection			
Radiac Set: AN/PDR-75A	17,454,368		
Chemical, Biological, Radiological, and Nuclear (CBRN) Small Unmanned Ground Vehicle	310,167		
Simulators			
Multiple Amputee Trauma Trainer (MATT)	10,483,251		
Engagement Skills Trainer 3000	1,412,600		
Transportation Reserve	800,000		
Engineer Change Proposal (ECP) Reserve	277,869		
FY 2015 NGREA Equipment			
Command and Control Systems			
Engineer Command and Control (C2) Recon & Survey System		$2,400,000	
Logistics Automation System		255,000	
Engineer			
Urban Ops Platoon Support Equipment		4,250,000	
Urban Ops Squad Support Equipment		350,000	
Engineer Rapid Airfield Construction Capability		2,250,000	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
Hand Held Mine Detection - AN/PSS-14 REV 6		2,100,000	
Mobile Power Tool Set		1,500,000	
Self Propelled Concrete Saw		1,500,000	
Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE)		900,000	
Mixer, Concrete		800,000	
Assault Craft Boat Motors (15 Man)		800,000	
Assault Craft (15 Man)		600,000	
Vibratory Plate Compactor		500,000	
Global Positioning System - Survey		450,000	
Field Logistics			
Load Handling System: 2000G Water		6,750,000	
Fuel System Supply Point: 300K		6,000,000	
Rough Terrain Cargo Handler (RTCH)		5,000,000	
Laundry Advanced System Tailer		3,720,000	
Petroleum Distribution System		2,800,000	
Truck Lift Fork: 5K Rough Terrain		1,500,000	
Assault Kitchen		840,000	
Petroleum Quality Analysis System		700,000	
Refueling System: Aviation HEMMT Tanker		400,000	
Test Measurement Diagnostic Equipment		310,000	
Tactical Wheeled Vehicles			
HMMWV General Purpose		19,500,000	
HMMWV Ambulance (M997A3)		13,200,000	
Truck Medium Tactical		15,000,000	
Driver Vision Enhancement		11,900,000	
HEMTT Modernization (Cargo)		10,800,000	
HEMTT Modernization (POL)		10,400,000	
HEMTT LHS		7,500,000	
Palletized Loading System Modernization		6,000,000	
Heavy Equipment Trailer		3,450,000	
Heavy Dump Truck		2,500,000	
Semitrailer Fuel Tanker		1,125,000	
Truck Tractor - Yard		600,000	
Light Engineer Utility Trailer		500,000	
Force Protection			
Chemical Biological Protective Shelter (M8E1)		24,200,000	
Individual Radiological Dosimeter		1,800,000	
Simulators			
Multiple Amputee Trauma Trainer		5,750,000	
Transportation Common Driver		2,800,000	
Weapons Gunnery Trainer		800,000	
Transportation Reserve		500,000	
Total	**$175,000,000**	**$185,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

USAR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature[1]	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019[2] Qty	Remarks
Air Defense					
Center: Communications Operations	C18033	+4			
Aviation					
Command System: Tactical AN/TSQ-221 *	C61597			+1	
Maintenance Platform: Hydraulic Adjustable Type 3 to 7 ft *	M02504	+1			
Battle Command and Control					
Air Conditioner: Fl/Wall A/C AC 115V 1ph 50-60Cy 9000Btu Cmp Hz	A23828	+4			
BTUh 60000 Environmental Control Unit: HD-1240/G	B29108	+41			
Command System Tactical *	C40996	+1			
Computer Set: Digital AN/GYK-62 *	C13866	+25			
Computer Set: Digital OL-603/TYQ	C78827	+12	+1		
Computer System: Digital AN/GYK-61 *	C18448	+46			
Distribution System Elec: 120/208V 3ph 40amp *	F55485	+120			
Distribution System Elec: 120V 1ph 60amp *	F55553	+4			
Deployment Kit Radio Frequency Identification: AN/PSX-2	D44050	+4			
Feeder System Electrical: 3ph 100 amp	F55621	+32			
Utility Receptacle *	U89185	+148			
Computer System: Digital AN/PYQ-3	C18312	+21			
Battle Command Transport Networks					
Joint Node Network (JNN) Central Office Telephone Auto *	J05001	+4			
Radio Set: AN/VRC-90F(C) *	R68044	+1,040	+14		
Radio Test Set: AN/GRM-122 *	R36178	+2			
Combat Mobility					
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	+3			
Launcher Mine Clearing Line Charge Trailer Mounting: (MICLIC)	L67342	+1			
Field Logistics					
Electronic Shop Shelter-mtd Avionics: AN/ASM-146 *	H01907			+1	
Frequency Selective Levels Meter: AN/USM-490	F60502		+1		
Rough Terrain Container Handler: Kalmar RT240 *	R16611	+8	+1		
Sanitation Center: Food *	S33399	+55			
Tactical Water Purification System (TWPS) 1500 gph *	T14017		+1		
Tank and Pump Unit Liquid Dispensing Truck mounting *	V12141	+5			
Trailer Tank Water: 400-gal 1.5-ton 2-wheel *	W98825	+102			
Force Protection					
Battlefield Anti-Intrusion System: AN/PRS-9	B57077		+25		

USAR
Projected Equipment Transfer/Withdrawal Quantities

Nomenclature[1]	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019[2] Qty	Remarks
General Engineering					
Crane Wheel-mtd: Hydraulic Light 7.5-ton w/Cab *	C36151	+2	+2		
Hydraulic Electric Pneumatic Petroleum Operated Equip (HEPPOE)	H05004	+2			
Tractor Full Tracked: Low Speed T-5 Type II W/Ripper	T05026	+1			
Tractor Full Tracked Low Speed: T5	T05029	+1			
Maneuver Systems					
Launcher Grenade Armament Subsystem: M257	L44031	+142	+86		
Medical Field Systems					
Analyzer Blood: (AB)	A83359	+6			
Computer Set: Digital AN/TYQ-106(V)1	C18345	+64			
Electrocardiograph: Solid State Amplifier Port 115V 60Hz AC	E17591	+4			
Generator Oxygen Medical System: Portable POGS 33	C74952	+4			
Monitor Patient Vital Signs	M66626			+15	
X-Ray Apparatus Radiographic Medical	X92545	+1			
X-Ray Apparatus: Low Capacity Port *	X90968	+3			
Soldier Weapons					
Launcher Grenade: M320	L03621	+143	+11	+2	
Machine Gun 5.56mm: M249	M09009	+136			
Machine Gun: Caliber .50 Heavy Fixed Turret Type	L91701	+75			
Strike					
Computer Set Field Artillery General: AN/GYK-47(V)5	F55607				
Computer System, Digital: AN/GYK-56 (AFATDS)	C05018	+3			
Support Systems					
Firing Device Demolition: Mk152 Mod 0	F60336	+17			
Tool Set EOD: Mk1-3	T61212	+1			
Trailers					
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	+1			

1. "*" indicates a Critical Dual Use (CDU) equipment item

2. The Army continues to analyze the effects of end strength reductions and restructuring associated with sequestration. Consequently, Table 5 data for the projected equipment transfer and withdrawal estimates associated with FY 2019 are pending senior Army leader decisions.

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
USAR indicated no planned transfers or withdrawals in the FY 2013 NGRER.							
FY 2013 P-1R Equipment							
Aircraft							
RQ-11 (RAVEN)				$1,062,000	$2,100,000		
CH-47 Helicopter				198,000,000	198,000,000		
Modification of Aircraft							
Utility/Cargo Airplane modifications				5,012,000	0		
Network and Mission Plan				0	1,315,000		
Global Air Traffic Management (GATM) Rollup				2,713,000	0		
Weapons and Tracked Combat Vehicles (WTCV)							
Stryker Vehicle				39,561,000	39,561,000		
XM320 Grenade Launcher Module (GLM)				1,114,000	1,114,000		
Common Remotely Operated Weapons Station				6,180,000	6,180,000		
Spares and Repair Parts (WTCV)				4,306,000	8,400,000		
Tactical and Support Vehicles							
Family of Medium Tactical Vehicles (FMTV)				84,659,000	83,800,000		
Family of Heavy Tactical Vehicles (FHTV)				12,231,000	10,300,000		
Heavy Expanded Mobile Tactical Truck (HEMTT) Extended Service Program (ESP)				2,737,000	2,600,000		
HMMWV Recapitalization Program				0	92,913,000		
Modification of In-service Equipment				7,131,000	0		
Communications and Electronics Equipment							
Global Broadcast Service (GBS)				3,792,000	3,792,000		
Medical Communications for Combat Casualty Care (MC4)				926,000	926,000		
Reserve Civil Affairs (CA)/Military Information Support Operations (MISO) GPF Equipment				28,781,000	16,800,000		
Telecommunications Security (TSEC) - Army Key Management System (AKMS)				1,504,000	0		
Information Systems Security Program (ISSP)				1,995,000	4,400,000		
Sense Through the Wall (STTW) Sensor				291,000	0		
Night Vision Devices				6,989,000	2,400,000		
Night Vision, Thermal Weapon Sight				1,979,000	0		
Green Laser Interdiction System (GLIS)				500,000	500,000		
Tactical Operations Centers				20,161,000	0		
Battle Command Sustainment Support System (BCS3)				1,217,000	4,100,000		
Network Management Initialization and Service				10,030,000	5,500,000		
Maneuver Control System (MCS)				19,539,000	15,300,000		
Single Army Logistics Enterprise (SALE)				39,813,000	39,813,000		

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Reconnaissance and Surveying Instrument Set				4,654,000	4,654,000		
Items less than $5M (Surveying Equipment)				1,293,000	1,629,000		
Other Support Equipment							
Family of Non-lethal Equipment (FNLE)				718,000	0		
Base Defense Systems (BDS)				432,000	5,600,000		
CBRN Soldier Protection				953,000	953,000		
Tactical Bridging				8,050,000	0		
Tactical Bridge, Float-Ribbon				1,075,000	0		
Robotic Combat Support System (RCSS)				2,114,000	0		
Items Less Than $5M (Countermine Equipment)				296,000	0		
Heaters and Environmental Control Units (ECUs)				7,469,000	2,900,000		
Field Feeding Equipment				10,714,000	7,500,000		
Cargo Aerial Delivery & Personnel Parachute System				6,465,000	5,200,000		
Family of Engineer Combat and Construction Sets				7,903,000	7,903,000		
Items Less Than $5M (Engineer Support)				907,000	6,183,000		
Distribution Systems, Petroleum & Water				1,695,000	1,695,000		
Combat Support Medical				12,300,000	4,400,000		
Mobile Maintenance Equipment Systems				518,000	518,000		
Mission Modules - Engineering				3,544,000	6,100,000		
Tractor, Full Tracked				3,209,000	4,300,000		
High Mobility Engineer Excavator (HMEE)				1,000,000	100,000		
Construction Equipment ESP				1,232,000	1,232,000		
Generators and Associated Equipment				5,129,000	14,100,000		
Family of Forklifts				2,592,000	2,592,000		
Training Devices, Nonsystem				2,776,000	1,723,000		
Close Combat Tactical Trainer				1,325,000	1,325,000		
Aviation Combined Arms Tactical Trainer				1,909,000	2,081,000		
Gaming Technology in Support of Army Training				600,000	651,000		
Integrated Family of Test Equipment (IFTE)				3,378,000	3,200,000		
Test Equipment Modernization (TEMOD)				2,087,000	2,700,000		
Modification of In-service Equipment (OPA-3)				12,846,000	12,846,000		
FY 2013 NGREA Equipment							
Command and Control Equipment							
Tactical Network Systems						$4,309,973	$0
Logistics Automation Systems						652,000	2,117,181
Construction and Engineering Equipment							
Heavy Scraper						5,803,340	14,101,476
Field Logistics Systems							
Rough Terrain Cargo Handler						15,480,000	34,745,466
Generators						14,627,040	13,315,153
Field Kitchen						2,709,200	0
Truck Lift 5000lb Rough Terrain						0	4,499,301

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Food Sanitation Centers						0	1,759,200
Transportation							
Transportation Costs						2,001,800	167,033
Aviation							
External Stores Subsystem						20,283,330	0
Warning Receiver Counter Terrorism						7,665,000	0
Aviation Ground Support System						544,698	0
Armament Subsystem						320,000	0
Medical Systems							
Mobile Medicine Equipment Set						3,600,000	0
Simulators							
Engagement Skills Training (EST)						9,690,000	0
Homestation Institutional Training System (HITS)						8,500,000	0
Containerized Ranges						3,000,000	0
Watercraft Bridge Simulator						1,500,000	0
Construction Simulator						8,000	0
Tactical Wheeled Vehicles							
Truck PLS (M1075A1)						98,787,128	98,545,114
Truck Wrecker (M984A4)						29,169,865	28,751,847
Truck Medium Tactical Vehicle (MTV)						1,099,744	20,491,626
Truck HEMTT (M1120A4)						853,173	840,228
Engineering Change Proposal (ECP)						255,709	0
HMMWV Ambulances						0	15,000,000
Watercraft							
Command and Control Equipment						9,000,000	0
Shore Support Equipment						140,000	0
Force Protection							
Chemical Biological Protective Shelters						0	2,666,375
Radiac Set, AN/PDR-75A Dosimeters						0	3,000,000
Total				**$611,406,000**	**$641,899,000**	**$240,000,000**	**$240,000,000**

USAR
Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature[1]	Reqd Item Equip No.	Substitute Item Nomenclature[1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Aircraft						
Helicopter Utility: UH-60A *	K32293	Helicopter Utility: UH-60L *	H32361	45	X	
		HH-60L: MEDEVAC Helicopter	U84291	5	X	
		HH-60M: MEDEVAC Helicopter *	M33458	26	X	
Utility Cargo Aircraft: UC-35A *	U05004	Airplane, Utility: UC-35B	A05015	5	X	
Battle Command & Control						
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	Power Plant: Electric Trailer-mtd 30kW 50/60Hz AN/MJQ-40 *	P42126	19	X	
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	Power Plant: Electric Trailer-mtd 60kW 50/60Hz AN/MJQ-41 *	P42194	9	X	
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	Generator Set Diesel Engine TM: PU-803 *	G35851	44	X	
Trailer-mtd: PU-2103 60kW 50/60Hz M200A1	T60034	Generator Set: Diesel Trailer-mtd 60kW 50/60Hz PU 805 Chassis w/Fender *	G78306	15	X	
Battle Command Transport Networks						
Radio Set: AN/PRC-104A	R55200	Radio Set: AN/PRC-150A(C)	R62247	512	X	
Radio Set: AN/PRC-119F(C) *	R83141	Radio Set: AN/VRC-88F(C) *	R67330	59	X	
Teleconference System: AN/TYQ-122 *	T43146	Video Teleconference Sys: AN/TYQ-122A	P05024	4	X	
Combat Mobility						
Loader Scoop Type: DSL 2-1/2 cu-yd Hinge Frame w/Multipurpose Bucket *	L76556	Loader Scoop Type: 2.5 cu-yd *	L76897	25	X	
Tractor Wheeled: DSL 4X4 w/Excavator & Front Loader *	T34437	High Mobility Engineer Excavator (HMEE): Type I *	H53576	1	X	
		Tractor-wheeled: Industrial *	T34505	12	X	
Field Logistics						
Heater: Duct Type Portable 1200-00 Btus	H00586	Heater: Duct Type Portable 350K BTU *	H00654	177	X	
Kitchen Field Trailer-mtd: Mtd on M103A3 Trailer *	L28351	Containerized Kitchen (CK) *	C27633	19	X	
Shop Equipment Auto Maint/Repair: OM Common No 1	W32593	Shop Equipment: Automotive Vehicle *	S25885	28	X	
Test Set Radio Frequency Power: AN/USM-491	T89944	RF Power Meter Test Set	Z682FD	34	X	
		Wattmeter Test Set: TS-3793/U	W39339	7	X	
Welding Shop Trailer-mtd	Y48323	Shop Equipment: Welding *	W48391	95	X	
Force Protection						
Alarm Chemical Agent Automatic: M22	A33020	Joint Chemical Agent Detector *	J00697	654	X	
General Engineering						
Excavator: Hydraulic Type I Multipurpose Crawler Mount *	E27792	Excavator: Hydraulic (HYEX) Type III Multipurpose Crawler Mount *	E27860	2	X	
Scraper Elevating: SP 8-11 cu-yd Non-Sectionalized *	S29971	Scraper Elevating: Self Propelled 9-11 cu-yd Sectionalized *	S30039	5	X	
Tractor Full Tracked Low Speed: DSL MED DBP w/Buldoz & Scarif Winch *	W76816	Tractor Full Tracked Low Speed: T8	T05015	54	X	
Solider Systems						
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-7	M74849	Target Locator Module	T27471	57	X	
Mount Machine Gun: 40mm MK93	M12647	Mount Machine Gun: MK64 Mod9	M74823	819	X	

USAR
Major Item of Equipment Substitution List

Required Item Nomenclature[1]	Reqd Item Equip No.	Substitute Item Nomenclature[1]	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No
Night Vision Goggle: PVS-7	N05482	Mono Night Vision Device: AN/PVS-14 *	M79678	59,316	X	
Solider Weapons						
Machine Gun: Light 5.56mm M249	M39263	Machine Gun 5.56mm: M249	M09009	739	X	
Trailers						
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload *	S10059	Semitrailer Tank: 5000-gal Fuel Dispensing Automotive W/E *	S73372	49	X	
Semitrailer Tank: Petroleum 7500-gal Bulk Haul *	S73119	Semitrailer Tank: 5000-gal Fuel Dispensing Automotive W/E *	S73372	405	X	
Trailer Cargo: High Mobility 1-1/4 ton *	T95924	Light Tactical Trailer: 3/4 ton *	T95992	204	X	
Trucks						
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	Truck Ambulance: 2 Litter Armd 4X4 W/E (HMMWV)	T38707	7	X	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton 10X10 *	T40999	Truck Cargo: Heavy PLS Transporter 15-16.5 ton 10X10 w/MHE W/E *	T41067	77	X	
		Truck: Palletized Loading System (PLS)	T81874	31	X	
Truck Cargo: M985A4	T59380	Truck Cargo: Tactical HEMTT w/Medium Crane *	T39586	81	X	
		Truck Cargo: 5-ton wo/Winch *	T41515	7	X	
Truck Cargo: MTV W/E W/W *	T41135	Truck Cargo: MTV W/E *	T61908	156	X	
Truck Cargo: Tactical HEMTT w/LHS *	T96496	Truck Palletized (LHS): M1120A4 *	T55054	125	X	
Truck Dump FMTV: 10-ton *	T65047	Truck Dump: 10-ton w/Winch *	T65274	24	X	
Truck Tank: Fuel Servicing 2500-gal 8X8 Heavy Expanded Mobility *	T87243	Truck Tank: Fuel Servicing 2500gal HEMTT w/Winch *	T58161	22	X	
Truck Tank: wo/Winch *	T58318	Truck Tank: Fuel Servicing 2500gal HEMTT w/Winch *	T58161	9	X	
Truck Tractor: Heavy Equipment Transporter (HET)	T59048	Truck Tractor: XM1070A1	T05012	69	X	
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	Tractor Line Haul: M915A5	T88858	119	X	
Truck Tractor: MTV W/E *	T61239	Truck Tractor: MTV W/E W/W *	T61307	8	X	
		Truck Tractor: wo/Winch *	T88983	150	X	
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	Truck Utility: Heavy Variant HMMWV 10000 GVW W/E *	T07679	894	X	
Truck Wrecker: Tactical HEMTT w/Winch *	T63093	Truck Wrecker: M984A4 *	T63161	74	X	
Watercraft						
Container Handling Unit	C27294	Container Handling Unit (CHU) *	C84862	55	X	
Outboard Motor Gasoline: 25-40 bhp	N34334	Outboard Motor Gasoline: 35hp Silenced Waterproofed *	P34402	1	X	

1. "*" indicates a Critical Dual Use (CDU) equipment item

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC top ten prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	Liquid Logistics - Petroleum	1,438*	1,292	varies	$264M	The Army Reserve provides over 90% of the bulk petroleum storage and distribution capability for the Army. The most pressing need is modernization of the 7,500 gallon tanker semitrailer fleet that exceeds economic useful life. There is currently no Army strategy for a replacement platform or modernization program, but the system is an ideal candidate for a non-developmental item or commercial off-the-shelf solution.
2	Tactical Battle Command Systems	30,660	14,908	varies	$394M	Tactical Battle Command Systems are a suite of integrated capabilities that afford battlespace visualization and synchronization of combat power by allowing data sharing and collaboration in near real time. The rapid evolution of technology associated with these systems is outpacing the ability of Army to keep pace with funding requirements. This budget shortfall reflects only the documented shortage of Army Reserve hardware requirements. Army does not provide budget shortfall data for system software upgrades, and Army Reserve cannot independently discern the total requirement or funding shortfall.
3	Heavy Trucks - M915 Line Haul & Heavy Dump (20 Ton)	2,666	1,680	varies	$558M	The M915 contract expired in FY 2014 before Army Reserve completed fielding to replace obsolete legacy systems. Only 40% of the existing Army Reserve M915 fleet is armor-capable. The legacy fleet of heavy dump trucks exceed economic useful life, and a modern replacement has not been identified. Both systems are candidates for non-developmental item procurement and readily available on commercial market.
4	Family of Heavy Expanded Mobility Tactical Trucks (HEMTT)	2,212	1,055	varies	$390M	Army Reserve owns 43% of the overall transportation capability for the Army. The HEMTT family of trucks includes cargo, fuel tanker, load handling system, and bridge equipment carrying variants. Modernization programs to fill shortages, extend service life, and upgrade to armor capable models will greatly improve survivability and global employment of systems in support of the full spectrum of military operations.
5	HMMWV Ambulance (M997A3) & HMMWV Recap (M1097)	882	688	$335K (188) $200K (500)	$163M	Army has not identified a replacement platform for the HMMWV ground ambulance. The average age of the legacy fleet is 27 years. With Congressional support, Army Reserve has made investments via a Rock Island Army Depot public-private partnership program to modernize 51% of the fleet to upgraded M997A3 models. The Army HMMWV Recap program ended in 2010. The non-armored model (M1097) fleet will begin reaching economic useful life in FY 2018. Re-opening a Recap line to begin incremental modernization is needed to avoid creating an unaffordable backlog in the out years.

USAR
Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
6	Construction Engineer Equipment	736*	389	varies	$124M	Due to force design updates for construction engineer structure, requirements for a multitude of systems increased dramatically. This budget shortfall reflects approved, but undocumented requirements for heavy cranes, scrapers, motorized graders, and modern tools associated with the Hydraulic, Electric, Pneumatic, Petroleum Operated Equipment (HEPPOE) program.
7	Assured Mobility Equipment	594*	437	varies	$1.3B	The portfolio includes Echelons Above Brigade (EAB) route clearance and bridging systems designed to enhance maneuver for combat units. The funding shortage reflects unfunded costs associated with: upgrading 60 legacy Armored Vehicle Launch Bridges and/or procurement of the modern Joint Assault Bridge replacement platform; Modernization of 184 Medium Mine Protected Vehicles found in Route Clearance Companies; and replacement of 78% (98 of 126) of Bridge Erection Boat fleet.
8	Mission Command - Transport Network Systems	72,971	18,100	varies	$1.2B	Tactical radios represent the majority of the budget shortfall. Most legacy radios exceed economic useful life, and maneuver units remain the priority of fielding for emerging technology. Incremental investments are needed to prevent an insurmountable funding challenge and widening compatibility gap mid to long term.
9	Nuclear, Biological, and Chemical (NBC) Detection & Protection	204*	176	varies	$663M	This budget shortfall consists of unfunded requirements for NBC Reconnaissance Vehicles (NBCRV) and Chemical & Biological Protective Shelters (CBPS). An Army decision to assume risk in NBCRVs, coupled with program termination prior to meeting the acquisition objective, leaves the Army Reserve 54% (44 of 96) short in the capability. The CBPS program is an undocumented requirement already in procurement. Army anticipates joint funding beyond FY 2019 to fund 60% (65 of 108) of the total requirement.
10	Material Handling Equipment (MHE)	1,630*	1,074	varies	$134M	The MHE budget shortfall includes unfunded requirements for Rough Terrain Cargo Handlers (RTCH), 5K Rough Terrain Forklifts, and Yard Tractors. MHE is historically one of the lowest funding priorities for the Army. Contracts for both the RTCH (87% filled) and Yard Tractor (33% filled) programs were terminated before completing acquisition objectives.

* Includes approved Basis of Issue Plan requirements pending annotation on unit authorization documents.

Chapter 3
United States Marine Corps Reserve

I. Marine Corps Overview

"The United States Congress, specifically and uniquely, structured and prescribed the role of the Marine Corps as a '…balanced force-in-readiness, air and ground.'"[1] The Marine Corps, as an expeditionary force, provides key capabilities across the range of military operations to the Joint Force. Its global presence, achieved through basing and highly mobile Marine Air Ground Task Forces, gives the Commander in Chief a vast range of strategic, operational and tactical options to protect the Nation's interests. Marine forces operate in *all* warfighting domains: land, sea, air, cyber, and space. The Marine Corps is capable of responding to the full spectrum of threats: conventional, hybrid, or irregular.

> To meet the intent of the Congress, the Marine Corps must maintain a high state of combat readiness. We look at readiness through the lens of our 5 pillars of readiness – high quality people, unit readiness, capacity to meet the combatant commanders' requirements, infrastructure sustainment, and equipment modernization. These pillars represent the operational and foundational components of readiness across the Marine Corps. Our role as America's 9-1-1 force informs how we man, train, and equip our force, and how we prioritize and allocate resources across the pillars of readiness. While we will always ensure that our forward deployed Marines and Sailors are properly manned, trained and equipped, we seek to maintain balanced investment across the pillars to ensure current and future readiness. We emphasize that all Marines and all Marine units are physically and mentally ready to deploy to any clime and place, at any time.[2]

A. Marine Corps Planning Guidance

1. Strategic Concept of the Marine Corps

The Marine Corps is structured to project timely and responsive combat power across the globe at an economical cost.

> The Marine Corps is a force of economy. For 6.0% of the defense budget, the Marine Corps provides 21% of the Nation's infantry battalions and 15% of the fighter/attack aircraft. These capabilities, organized as Marine Air Ground Task Forces with an organic logistical element provide the Nation with affordable insurance and a strategic hedge in an era of uncertainty and unprecedented complexity. We expect that the next 10 years will be largely characterized by small-scale crises and limited contingencies in and around coastal environments. Should major operations and campaigns occur, they are likely to involve a significant maritime and littoral dimension. Ready, responsive, flexible and strategically mobile naval forces are essential to ensuring continued access and security in the global commons. The increased likelihood of operations in the littorals demands the Marine Corps focus on its Title 10 responsibilities to be organized, trained and equipped to come from the sea across the range of military operations.[3]

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[1] Commandant of the Marine Corps, Testimony before House Appropriations Subcommittee on Defense, February 26, 2015, p. 2.
[2] Ibid.
[3] Ibid, p. 3.

2. Marine Corps Total Force Concept

Within the Marine Corps, the Active Component (AC) and Reserve Component (RC) are integrated as a Total Force. Through the employment of the concept of "mirror-imaging," AC and RC forces are manned, trained, and equipped to the same standards, thereby enabling RC forces to be seamlessly employed as an integral part of the Marine Corps operating forces.

> Our ability to meet the combatant commanders' requirements on a day-to-day basis and in response to a major contingency is inextricably linked to the readiness of our Marine Corps Reserve. They are integrated into everything that we do, to the point where, when we look at our requirements over the next couple of years, we actually have a fourth generation plan that fully integrates our reserves into our ability to meet those forward presence requirements every day.[4]

B. Marine Corps Equipping Policy

The Marine Corps develops a Total Force Approved Acquisition Objective for each new item of equipment by balancing warfighting requirements with budgetary constraints. This materiel management approach ensures that equipment is sourced and aligned with the Service's equipping strategy. It also reduces latency in distribution, and improves visibility and transparency of the materiel distribution process.

C. Plan to Fill Mobilization Shortages in the RC

Reserve units maintain equipment based upon the unit's Training Allowance (T/A), which is a portion of the warfighting equipment requirement set forth in the unit's Table of Equipment (T/E). All equipment above the T/A is stored at Marine Corps Logistics Bases and other "in stores" locations. Globally pre-positioned equipment can be utilized to bring RC units to full T/E equipping levels should the need arise. This methodology, known as "global sourcing," has been used effectively to satisfy past AC and RC unit equipment shortfalls.

D. Initiatives Affecting RC Equipment

As the Nation continues to face fiscal uncertainty, the Marine Corps will need to continue to rely on legacy equipment to maintain readiness throughout the Total Force. "Much of our modernization resources are focused on improving the capabilities and extending the life of current systems in order to fill the capabilities gaps that can be exploited by today's threats. These modernization efforts span from our AAV's [amphibious assault vehicles] to our current legacy aviation platforms."[5] However, the RC's ability to concurrently maintain legacy and new equipment will become increasingly costly, which will have a negative effect on overall readiness.

E. Plan to Achieve Full Compatibility between AC and RC

The Marine Corps AC and RC are essentially mirror imaged with regard to equipment due to horizontal fielding between the components. However, certain instances exist where there is a detrimental lack of mission-essential equipment parity between RC and corresponding AC units. The judicious use of the National Guard and Reserve Equipment Appropriation (NGREA) has greatly assisted with closing these compatibility gaps.

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[4] Commandant of the Marine Corps, Testimony before Senate Armed Services Committee, March 10, 2015, p. 26.
[5] Commandant of the Marine Corps, Testimony before House Appropriations Subcommittee on Defense, February 26, 2015, p. 27.

II. Marine Corps Reserve Overview

A. Current Status of the Marine Corps Reserve

1. General Overview

Reserve units are organized, trained, and equipped in the same manner as their active counterparts and are operationally interchangeable with them. All Marines, both AC and RC, stand ready to answer their Nation's call to arms.

Top RC Equipping Challenges

- Transition to KC-130J Super Hercules
- Procurement of the MQ-21A Blackjack Small Tactical Unmanned Aircraft System (STUAS)

> Over the past 14 years, the Marine Corps Reserve has been engaged in combat operations and large-scale counterinsurgency in Iraq and Afghanistan, as well as in regional security cooperation, crisis response, and crisis prevention activities in support of geographic combatant commanders. This persistent operational tempo has built a depth of experience through the ranks that is unprecedented in generations of Marine Corps Reservists.[6]

The Marine Corps Reserve mission has expanded from being solely a strategic capability to capability that now includes the operational level of combat. "When you use the term 'operational reserve,' what it means is that we're using them on a day-to-day basis to meet not only the routine requirements of the combatant commander, but, again, the historic need for a strategic reserve that could respond to an unexpected major contingency."[7] These routine requirements range from individual augmentation of AC staffs from the warrior level to the theater level, to Security Cooperation engagements, multi-national exercises and other steady state missions.

The KC-130J fielding to the Marine Corps AC has been completed, while the RC fielding has lagged significantly. The legacy KC-130T aircraft are projected to remain in RC service until FY 2022. The two aircraft models have completely different logistics, maintenance, and aircrew requirements. The longer the RC maintains both airframes, the longer the RC has to duplicate logistics, maintenance and training investment. Only 10 of the remaining 23 KC-130Js to be fielded to the RC are programmed across the Future Years Defense Program (FYDP).

The MQ-21A will provide the Marine Expeditionary Force and subordinate commands (Divisions and Regiments) a dedicated intelligence, surveillance, and reconnaissance system capable of delivering intelligence products directly to the tactical commander in real time. This program is still in low-rate initial production with AC procurement beginning in FY 2014. The RC units will be the last to be fielded the MQ-21A, which is currently set for FY 2021. Lack of these systems within the RC creates a significant capability gap with AC forces throughout the projected seven-year fielding period.

2. Status of Equipment

Due to the unique geographic dispersion of Marine Corps Reserve units and their limited storage capacity, proper accountability of equipment and validation of the T/A is essential to maintain

[6] Commander, Marine Forces Reserve, Testimony before Senate Appropriations Subcommittee on Defense, April 29, 2015, p. 3.
[7] Commandant of the Marine Corps, Testimony before Senate Armed Service Committee, March 10, 2015.

overall readiness. The RC will continue to meet the Commandant's first priority of providing the best trained and equipped Marine units while also protecting the enduring readiness of the Reserve equipment pool. The RC has consciously ensured the equipment sets of units augmenting and reinforcing the AC are on par with AC equipment sets.

a. Equipment On-hand

The Marine Corps continues to ensure the RC has the assets to train through its use of a training allowance that is not routinely utilized to source operational requirements. *Table 1 Consolidated Major Item Inventory and Requirements,* provides the projected equipment on-hand inventories and requirements of Marine Corps Reserve units for the period FY 2017 through FY 2019. These on-hand quantities do not reflect the additional equipment maintained by Marine Corps Logistics Command that account for the difference between full wartime equipment requirements and unit training allowances. The equipment items listed in *Table 8 Significant Major Item Shortages* reflect the highest priority programs that if fielded, will directly enhance the RC's current unit training allowance.

b. Average Age of Major Items of Equipment

The equipment listed in *Table 2 Average Age of Equipment* provides the average age of selected major equipment items. The average age of RC equipment is currently consistent with the age of equipment in the AC. The majority of ground combat systems that are at the end of their life cycle have programs that will extend the life cycle of that equipment through upgrades and modifications, or have new equipment fielding already planned.

c. Compatibility of Current Equipment with Active Component

Although complete compatibility is difficult to achieve due to Total Force priorities, equipment compatibility between the AC and RC is closer than ever. This is expected to become more of a challenge as operationally driven fielding constraints either delay or reduce the fielding of new equipment programs or have the RC being fielded at the end of the fielding plan.

d. Maintenance Challenges

The short and long term maintenance and sustainment of RC equipment remains a challenge. Reserve unit structure and personnel realignments have changed the characteristics of some RC units, which subsequently changed equipment sets and maintenance requirements. In previous fiscal years, the RC used Contracted Logistics Support Teams to alleviate equipment downtime; however, the reduction of baseline funding throughout DOD drastically reduced the use of maintenance support teams to supplement RC maintainers. These significant changes, along with the lack of proper support facilities, lack of logistics information systems training, and reduced quantities of maintainers adds significantly to these challenges. To provide the RC the required maintenance capabilities in the future, budgeting for maintenance support teams will need to be planned for in the baseline budget.

e. Modernization Programs and Shortfalls

Marine Corps modernization programs are designed to keep pace with the ever-changing character of current and future operations. The RC uses various funding sources to execute these programs and fill equipment shortfalls.

- Training and Simulators: The Marine Corps continues to evaluate new training and simulation technologies to identify cost-effective training options. These systems improve the ability of the RC to perform at the same level as their AC counterparts.

- Combat Equipment Modernization: The Marine Corps must sustain and upgrade an appropriate number of the amphibious assault vehicle (AAV) to serve as a bridge to the Amphibious Combat Vehicle (ACV). The RC AAVs are not scheduled to receive upgrades until 2021, which exceeds the current service life (2018) by three years. The Marine Corps has requested that the AAV service life be extended to 2035.

- Aviation Modernization: The RC is integrated into the Marine Corps Aviation fielding and modernization plan. Utilizing FY 2014 NGREA funding, the RC is procuring the Helmet Display Tracker System (HDTS). The HDTS is a sensory gathering, display, and sight system that is being integrated into the AH-1W and AH-1Z attack helicopters.

- Command and Control Modernization: Upgrades to the Combat Operation Centers and command, control, communications, and computer related programs and infrastructure will enable the Marine Corps Reserve to sustain its high level of operational readiness in support of global mission requirements.

f. Overall Equipment Readiness

Equipment readiness of RC units remains consistent with AC readiness levels. The RC continues to effectively maintain its training allowance equipment in a high state of operational readiness.

B. Changes since the Last NGRER

The pending reduction in Overseas Contingency Operations funding presents additional challenges for the RC, including negative impacts to maintenance and procurement. Of note, RC rocket and missile inventories are experiencing critical shortages due to aging service life. The High Mobility Artillery Rocket System (HIMARS) inventory shortfall is particularly detrimental, as the RC possesses half of the Total Force HIMARS capability.

C. Future Years Program (FY 2017–FY 2019)

1. FY 2019 Equipment Requirements

The Marine Corps plans and programs Total Force Approved Acquisition Objectives for its equipment using a distribution priority based on the Force Generation Model, deployment schedule, and Commandant of the Marine Corps guidance.

2. Anticipated New Equipment Procurements

a. KC-130J Super Hercules

The KC-130J is a multi-role, multi-mission tactical tanker/transport aircraft developed to replace the KC-130F/R/T models. The KC-130J has increased range and speed, lower cost per flight hour, better fuel efficiency, improved reliability, and better maintainability. The AC completed the KC-130J transition in FY 2011, which left 28 KC-130T aircraft in the RC. The current policies that prohibit the employment of the legacy aircraft in Operation Enduring Freedom coupled with our budget challenges have resulted in competing Aircraft Procurement Navy appropriation priorities within the Navy and Marine Corps. These factors have delayed (by five years) the fielding of the KC-130J to the RC. Only five aircraft have been delivered to the RC as of the end of FY 2015 and only ten aircraft are programmed in the current FYDP. Compatibility differences between the KC-130J and KC-130T are creating significant challenges in training, manning, and logistical support. Accelerating the RC transition to the KC-130J is the number one priority for the Marine Corps Reserve. It is also the most expensive Reserve equipment shortfall, costing over $2.0B to purchase the additional 23 aircraft.

b. MQ-21A Blackjack

The MQ-21A Blackjack, a larger twin-tailed follow-on to the ScanEagle, was selected in 2010 for procurement by the Navy and Marine Corps to fill the requirement for a small tactical unmanned aircraft system (STUAS). The system provides persistent maritime and land-based tactical reconnaissance, surveillance, and target acquisition data collection and dissemination capabilities to the warfighter. The air vehicle's open-architecture configuration can integrate new payloads quickly and can carry sensor payloads as heavy as 25 pounds.

c. Light Armored Vehicle Anti-Tank (LAV-AT) Modernization

The modernization provides an upgraded Anti-Tank Weapon System (ATWS) to address obsolescence issues and provide improved reliability, availability, and maintainability. The central component is the Modified Improved Target Acquisition System (MITAS) featuring an Eye-safe Laser Range Finder (ELRF), to provide the ability to measure line-of-sight distances between 250 and 9,995 meters. This allows the gunner to accurately determine the range of enemy threats and assess the target before engaging. The upgraded ATWS also features a Far Target Locator (FTL)

process, which calculates the precise grid coordinates of an enemy threat by combining the ELRF-measured target range with the vehicle's Global Positioning System (GPS) location and bearing. The FTL operates out to 8 kilometers and enhances the LAV-AT long-range observation capability.

d. Ground/Air Radar Systems

A highly mobile multi-mission radar system designed to fully support worldwide expeditionary requirements is needed to replace legacy radar systems. An advanced radar system is required to provide a multi-faceted detection and tracking capability to enable engagements of a wide range of hostile threats. The AN/TPS-80 Ground/Air Task Oriented Radar (G/ATOR) system offers a robust air traffic control capability to ensure the safety of Marines worldwide. The proven Active Electronically Scanned Array radar technology enhances operational capabilities and gives the AN/TPS-80 G/ATOR system the ability to perform multi-mission tasks at significantly lower operation and maintenance costs compared to existing radar systems. In addition to providing a broad range of optimized radar capabilities, AN/TPS-80 G/ATOR provides automatic adaptability via scalable open system architecture. G/ATOR's multi-network capability ensures compatibility with additional DOD command and control systems.

3. Anticipated New Equipment Requirements

a. Amphibious Combat Vehicle

The Amphibious Combat Vehicle (ACV) is a program providing advanced generation, fully amphibious, armored lift capability to the Marine Air Ground Task Force. ACV supports ship-to-objective maneuvers by providing the capability to self-deploy from amphibious ships. A seamless transition between sea and land enables the seizure of beach landing zones where conditions preclude other types of entry, and facilitates rapid build-up of combat power ashore before an enemy can react. The Marine Corps needs the ACV to achieve an over-the-horizon, joint forcible-entry capability that aligns with future amphibious concepts of operation. The ACV acquisition strategy is in development and subject to Marine Corps decision regarding required capabilities.

b. Joint Light Tactical Vehicle

The Joint Light Tactical Vehicle (JLTV) is a joint Army and Marine Corps multinational program for a family of light tactical vehicles and companion trailers. JLTV objectives include increased protection and performance, minimized ownership costs by maximizing commonality and reliability, increased fuel efficiency, and executing effective competition throughout the program development. The JLTV family of vehicles includes six configurations and companion trailers in three payload categories for the Army and two payload categories for the Marine Corps. Commonality of components, maintenance procedures, and training between all variants will minimize total ownership costs. The JLTV family of vehicles will be capable of operating across a broad spectrum of terrain and weather conditions. The Marine Corps intends to replace a

portion of the high-mobility multipurpose wheeled vehicle (HMMWV) fleet with JLTVs as part of the ground transportation modernization effort. JLTV will give the warfighter increased protection through the use of scalable armor solutions, while returning the payload currently traded by existing tactical vehicles for added armor protection. Using a system-of-systems approach, JLTV will increase warfighter maneuver capacity by providing protected mobility on the modern battlefield. JLTV performance characteristics will exceed the armored HMMWV and will return expeditionary mobility to the joint services.

4. Anticipated Transfers from AC to RC

Twelve MV-22B aircraft are scheduled to be transferred from the AC to the RC in FY 2016 to complete the transition plan from the CH-46E.

5. Anticipated Withdrawals from RC Inventory

There are no anticipated major equipment withdrawals from the RC inventory in the foreseeable future.

6. Equipment Shortages and Modernization Shortfalls at the End of FY 2019

The RC wartime requirements are addressed in *Table 1 Consolidated Major Item Inventory and Requirements*, which delineates the major item shortfalls that are anticipated to exist at the end of FY 2019. *Table 8 Significant Major Item Shortages* presents the RC's highest priority unfunded equipment and modernization shortfalls affecting Reserve unit training allowances.

D. Summary

"As an integral element of the Total Force, the Reserve Component must remain highly interoperable. Our Marines and Sailors share an expeditionary mindset that shapes Marine Corps culture, ethos, and thinking. Accordingly, your Marine Corps Reserve is organized, manned, equipped, and trained to provide a professionally ready, responsive, and relevant Force as a Marine Corps solution to enable joint and combined operations. We are, and will remain, a key component in the Marine Corps' role as the Nation's expeditionary force in readiness."[8]

[8] Commander, Marine Forces Reserve, Testimony before Senate Appropriations Subcommittee on Defense, April 29, 2015, p. 3.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Aircraft							
Aircraft, Fighter/Attack, F/A-18A++	F/A-18A++	$71,000,000	11	11	11	11	15
Aircraft, Fighter, F-5F	F-5F	$19,100,000	1	1	1	1	1
Aircraft, Fighter, F-5N	F-5N	$2,300,000	11	11	11	11	13
Aircraft, Refueling/Cargo, KC-130J	KC-130J	$80,400,000	5	5	7	8	8
Aircraft, Refueling/Cargo, KC-130T	KC-130T	$63,200,000	14	14	14	14	14
Aircraft, Utility/Cargo, UC-12W	UC-12W	$15,100,000	2	2	2	2	2
Aircraft, Utility/Cargo, UC-35C/D	UC-35	$33,500,000	5	5	5	5	5
Helicopter, Attack, AH-1W	AH-1W	$18,935,714	32	37	38	25	25
Helicopter, Attack AH-1Z	AH-1Z	$31,900,000	0	0	0	7	7
Helicopter, Utility, UH-1Y	UH-1Y	$24,400,000	22	26	26	26	26
Helicopter, Cargo, CH-53E	CH-53E	$54,800,000	6	6	6	6	8
Tilt-rotor, Cargo, MV-22B	MV-22B	$80,100,000	12	24	24	24	24
RQ-7B Shadow System	RQ-7B	$22,433,000	2	2	2	2	3
MQ-21A Blackjack System	MQ-21A	$10,000,000	0	0	0	0	3
Tactical Operational Flight Trainer, F/A-18A++	F/A-18A++ TOFT	$4,969,000	1	1	1	1	1
Flight Training Device, KC-130J	KC-130J FTD	$18,000,000	0	1	1	1	2
Fuselage Trainer, KC-130J	KC-130J FUT	$12,000,000	0	0	0	0	2
Cockpit Procedures Trainer, KC-130J	KC-130J CPT	$2,375,000	1	1	1	1	2
Observer Training Aid, KC-130J	KC-130J OTA	$1,000,000	0	0	0	0	2
Aircrew Procedures Trainer, AH-1W	AH-1W APT	$4,400,000	1	1	1	1	1
Flight Training Device, UH-1Y	UH-1Y FTD	$13,450,000	0	2	2	2	2
Flight Training Device, CH-53E	CH-53E FTD	$9,077,000	0	1	1	1	1
Containerized Flight Training Device, MV-22B	MV-22B CFTD	$9,239,000	0	2	2	2	2
Institutional Mission Simulator, RQ-7B	RQ-7B IMS	$900,000	1	1	1	1	1
Communications & Electronics							
Theater Battle Management Core Systems	A0013	$277,468	1	1	1	1	2
Communications Data Link System (CDLS)	A0021	$324,501	2	2	2	2	2
Communications System	A0032	$1,325,179	15	15	15	15	16
High Frequency Vehicle System	A0067	$53,234	153	153	153	153	212
AN/GRC-256A	A0068	$40,000	3	3	3	3	4
Transportable Ground Receive Suite (TGRS), Enhanced	A0090	$194,063	12	12	12	12	18
Radio Set, Dual Vehicle Adapter (DVA), 50-watt	A0097	$14,000	1,246	1,246	1,246	1,246	1,687

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Multifunctional Information Distribution System (MIDS) Low Volume Terminal (LVT) 11	A0099	$286,510	4	4	4	4	5
Survey Instrument, Azimuth	A0116	$220,000	12	12	12	12	10
Phoenix	A0122	$1,813,000	2	2	2	2	10
Remote Subscriber Access Module - Transition Switch Module (TSM)	A0124	$69,886	136	136	136	136	125
Deployable End Office Suite - Transition Switch Module (TSM)	A0125	$461,217	38	38	38	38	38
Tactical Handheld Radio (THHR)	A0129	$4,800	1,273	1,273	1,273	1,273	2,087
Radio Set	A0139	$47,828	72	72	72	72	109
Antenna, Communication, Trailer-mounted	A0149	$495,000	2	2	2	2	9
Radio Set	A0153	$224,839	37	37	37	37	63
Radar Set (LCMR)	A0169	$581,000	5	5	5	5	5
Communications Security Module (CSM)	A0173	$44,550	69	69	69	69	91
LAN Service Module (LSM)	A0174	$92,330	69	69	69	69	91
Computer Digital Data Transfer	A0175	$2,615	72	72	72	72	116
LAN Extension Module	A0176	$27,930	275	275	275	275	361
Application Server Module (ASM)	A0177	$14,980	68	68	68	68	91
Support Wide Area Network (SWAN) D V1	A0234	$80,000	23	23	23	23	33
Very Small Aperture Terminal - Medium (VSAT-M)	A0241	$90,000	13	13	13	13	13
SWAN D V3	A0242	$420,000	14	14	14	14	26
SWAN D MRT	A0244	$105,000	10	10	10	10	11
Combat Operations Center (COC) V(3)	A0254	$1,848,286	8	8	8	8	12
Combat Operations Center (COC) V(4)	A0255	$1,372,700	20	20	20	20	22
Combat Operations Center (COC) V(2)	A0271	$2,500,000	1	1	1	1	2
Mobile Tactical Air Operations Module (TAOM)	A0305	$2,657,000	2	2	2	2	0
Tactical Exploitation Group - Remote Workstation w/Video Scout (TEG-RWS w/VSF)	A0383	$76,431	2	2	2	2	55
Satellite Terminal, Multiband, LTWT (LMST) Maxi-HUB	A0806	$1,500,000	1	1	1	1	3
Satellite Terminal, Multiband, LTWT (LMST) Mini-HUB	A0807	$900,000	1	1	1	1	8
Interrogator, Digital	A0880	$118,902	4	4	4	4	2
Tactical Common Operational Picture (COP) Workstation	A0932	$10,000	207	207	207	207	157
Radar Set, Firefinder	A1440	$7,500,000	6	6	6	6	5
Radar Set, Air Traffic Control, Lightweight	A1500	$377,777	1	1	1	1	2
Radar Set	A1503	$15,217,555	1	1	1	1	2
Radio Set	A1818	$55,874	18	18	18	18	6
Radio Set	A1957	$43,986	217	217	217	217	286
Radio Set, Multiband, Maritime	A2044	$7,431	268	268	268	268	635
Radio Terminal Digital, Troposcatter	A2179	$1,500,000	18	18	18	18	28
Advanced Field Artillery Tactical Data System	A2555	$45,200	210	210	210	210	153
Target Locator, Designator & Hand-off System (TLDHS) (BLKII)	A2560	$27,000	169	169	169	169	187

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Tactical SATCOM, Transportable (SMART-T)	A3232	$825,000	6	6	6	6	13
Interrogator Computer	A8018	$1,499	4	4	4	4	11
Transponder Computer	A8019	$1,254	4	4	4	4	9
Engineer							
Air Conditioner, 18K, 60Hz, R-410A	B0003	$9,009	128	128	128	128	130
Air Conditioner, 5-ton, 60K, R-22	B0008	$20,000	171	171	171	171	82
Air Conditioner, 10-ton, 120K Btu, R-22	B0010	$30,000	14	14	14	14	0
Environmental Control Unit (ECU), 36K Btu, R-22	B0014	$14,500	626	626	626	626	254
Integrated Trailer, ECU and Generator (ITEG)	B0018	$85,000	39	39	39	39	15
Distribution System, Mobile Elect Power, 5kW (Indoor)	B0027	$4,500	239	239	239	239	245
Distribution System, Mobile Elect Power, 5kW (Outdoor)	B0028	$7,500	404	404	404	404	349
Distribution System, Mobile Elect Power, 15kW	B0029	$8,800	173	173	173	173	189
Distribution System, Mobile Elect Power, 30kW	B0030	$16,100	141	141	141	141	131
Distribution System, Mobile Elect Power, 100kW	B0031	$28,500	84	84	84	84	74
Distribution System, Mobile Elect Power, 300kW	B0032	$22,100	11	11	11	11	16
All Terrain Crane (ATC) MAC-50	B0038	$578,000	10	10	10	10	26
Airfield Damage Repair (ADR) Kit	B0039	$450,000	3	3	3	3	7
Full Width Mine Roller, ABV	B0058	$110,000	0	0	0	0	3
Medium Crawler Tractor (John Deer)	B0060	$325,000	40	40	40	40	56
Tractor, Rubber Tire, Articulated Steering, MP	B0063	$123,508	123	123	123	123	103
Lightweight Water Purification System	B0071	$194,580	18	18	18	18	45
Air Conditioner, 60Hz, 9K 1-PH, R-410A	B0074	$9,510	76	76	76	76	17
Grader, Road, Motorized, Armored	B0078	$236,008	26	26	26	26	21
Low Metallic Signature Mine Detector	B0102	$35,156	102	102	102	102	186
Boat, Bridge Erection, Inboard Engine	B0114	$249,187	6	6	6	6	63
Interior Bay, M17	B0121	$111,968	69	69	69	69	108
Ramp Bay	B0122	$104,291	24	24	24	24	45
Bridge, Medium Girder, Dry Gap	B0152	$964,515	12	12	12	12	12
Container Handler, Rough Terrain, KALMAR	B0392	$525,000	10	10	10	10	8
M9 Armored Combat Earthmover	B0589	$1,000,000	10	10	10	10	20
Tactical Airfield Fuel Dispensing System (TAFDS) (Firestone)	B0675	$331,062	1	1	1	1	9
Amphibious Assault Fuel System (AAFS)	B0685	$1,238,680	6	6	6	6	9
Generator Set, 3kW, 60Hz, Skid-mtd	B0730	$9,922	267	267	267	267	179
Generator Set, 10kW, 60Hz, AMMPS, Skid-mtd	B0891	$19,912	216	216	216	216	223
Generator Set, 10kW, 400Hz, AMMPS, Skid-mtd	B0921	$21,273	20	20	20	20	12
Generator Set, 30kW, 60Hz, AMMPS, Skid-mtd	B0953	$22,046	114	114	114	114	284
Generator, Lightweight, Man-Portable	B0980	$5,262	245	245	245	245	76
Generator Set, 60kW, 400Hz, AMMPS, Skid-mtd	B1016	$29,793	5	5	5	5	12
Generator Set, 60kW, 60Hz, AMMPS, Skid-mtd	B1021	$26,956	134	134	134	134	207

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Generator Set, 100kW, 60Hz, Skid-mtd, TQG	B1045	$67,000	99	99	99	99	64
Refueling System, Expedient, Helicopter	B1135	$101,863	9	9	9	9	9
Pump Module, Fuel (SIXCON)	B1580	$23,350	141	141	141	141	135
Pump Module, Water	B1581	$7,200	113	113	113	113	79
Roller, Compactor, Vibratory, Self-propelled	B1785	$155,150	12	12	12	12	10
Storage Tank Module, Fuel (SIXCON)	B2085	$6,948	350	350	350	350	429
Storage Tank Module, Water (SIXCON)	B2086	$5,524	318	318	318	318	307
Sweeper, Rotary, Vehicle Mounting	B2127	$215,781	5	5	5	5	6
Loader, Backhoe (BHL)	B2483	$122,622	32	32	32	32	34
Armored Extendable Boom Forklift (EBFL) Forklift, Variable Reach	B2561	$98,442	68	68	68	68	64
Forklift, Rough Terrain, Light Capability (LRTF)	B2566	$110,000	134	134	134	134	89
Purification System, Water, Tactical	B2605	$350,000	11	11	11	11	33
General Supply							
Device, Propulsion, Diver	C4549	$77,270	22	22	22	22	37
Raiding Craft, Combat, Rubber, Inflatable (CRRC)	C5901	$16,745	65	65	65	65	86
Motor Transport							
Truck, Armored, Cargo, 7-ton, w/Winch Reducible DFCS	D0003	$315,174	90	90	90	90	447
Truck, Armored, XLWB Cargo, 7-ton, w/Winch Non-reducible	D0005	$248,656	0	0	0	0	84
Truck, Armored, Dump, 7-ton, w/Winch Non-reducible	D0007	$250,105	2	2	2	2	40
Truck, Tractor, 7-ton, w/o Winch	D0009	$270,106	32	32	32	32	19
Truck, Armored, Tractor, 7-ton, w/o Winch Non-reducible	D0013	$282,106	20	20	20	20	54
Truck, Armored, Wrecker, 7-ton, w/Winch Reducible	D0015	$880,674	50	50	50	50	55
Truck, Utility, Expanded Capacity, Enhanced, M1152	D0022	$179,831	410	410	410	410	346
Truck, Utility, Expanded Capacity, Armament Carrier	D0030	$229,689	742	742	742	742	746
Truck, Utility, Expanded Capacity, G2/GP Vehicle	D0031	$204,413	153	153	153	153	126
Truck, Utility, ECV, TOW Carrier, Armored	D0032	$222,487	52	52	52	52	64
Truck, Utility, Expanded Capacity, Fully-armored (2-door)	D0033	$193,595	160	160	160	160	295
Truck, Utility, Ground Mobility Vehicle, Armored (4-door)	D0034	$321,959	137	137	137	137	239
Truck, Cargo, 7-ton, w/Winch	D0198	$227,989	694	694	694	694	445
Semitrailer, Refueler, 5000 gal	D0215	$214,064	21	21	21	21	64
Semitrailer, Low-bed, 40-ton	D0235	$61,710	44	44	44	44	58
Trailer, Cargo, Resupply for HIMARS	D0861	$56,156	38	38	38	38	36
Trailer, Tank, Water, 400 gal., 1.5-ton, 2-wheel	D0880	$12,955	175	175	175	175	76
Truck Cargo 22.5-ton, 10X10, LVSR	D0886	$319,529	137	137	137	137	242
Truck, Tractor, 10X10, LVSR	D0887	$330,000	45	45	45	45	59
Truck, Ambulance, 4 Litter, Armored, HMMWV	D1001	$137,638	69	69	69	69	87
Truck, Ambulance, 2 Litter, Soft Top, HMMWV	D1002	$68,212	35	35	35	35	38
Truck, RTAA, XLWB Cargo, 7-ton, w/Winch	D1062	$250,424	86	86	86	86	141
HIMARS, Armored Resupply Vehicle, Non-reducible	D1063	$404,398	36	36	36	36	36

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Truck, Firefighting, Aircraft and Structure	D1064	$162,562	10	10	10	10	18
Truck, Dump, 7-ton, w/Winch	D1073	$238,105	48	48	48	48	34
Truck, Utility, Cargo/Troop Carrier, HMMWV	D1158	$60,409	633	633	633	633	536
Truck, Utility: Internally Transportable Vehicle, Light Strike Variant (ITV-LSV)	D1161	$256,547	0	0	0	0	30
Truck, Wrecker, 10X10, LVSR	D1214	$550,000	13	13	13	13	25
Ordnance & Weapons							
Scout Sniper Mid-range Night Sight	E0020	$8,795	534	534	534	534	481
Portable Lightweight Designator Rangefinder (PLDR)	E0042	$79,400	79	79	79	79	108
Saber System	E0055	$1,010,000	117	117	117	117	92
Man Transportable Robotic System (MTRS) EOD Pacbot	E0064	$129,000	1	1	1	1	3
Talon	E0066	$168,525	1	1	1	1	6
Semiautomatic Sniper System (SASS)	E0103	$8,500	197	197	197	197	172
Circle, Aiming	E0180	$3,725	108	108	108	108	96
Javelin	E0207	$133,063	72	72	72	72	64
Equipment Set, Night Vision	E0330	$116,014	28	28	28	28	28
Howitzer, Lightweight, Towed, 155mm	E0671	$2,500,000	49	49	49	49	49
Assault Amphibious Vehicle (AAV), Command	E0796	$2,000,000	6	6	6	6	9
AAV, Personnel	E0846	$2,000,000	63	63	63	63	182
AAV, Recovery	E0856	$2,000,000	6	6	6	6	7
Launcher, Rocket, Assault, 83mm	E0915	$37,604	239	239	239	239	243
Launcher, Tubular F/GM TOW Weapon System	E0935	$75,742	36	36	36	36	26
Light Armored Vehicle (LAV), Anti-Tank	E0942	$2,091,280	24	24	24	24	24
LAV, Command & Control (Battalion)	E0946	$3,255,380	10	10	10	10	10
LAV, Light Assault, 25mm	E0947	$3,224,110	85	85	85	85	88
LAV, Logistics	E0948	$1,883,020	23	23	23	23	22
LAV, Mortar	E0949	$2,507,080	13	13	13	13	12
LAV, Maintenance/Recovery	E0950	$2,183,920	8	8	8	8	8
Machine Gun, .50 cal., Browning, HB Flexible	E0980	$8,118	907	907	907	907	642
Machine Gun, .50 cal.	E0984	$13,648	90	90	90	90	100
Machine Gun, Medium, 7.62mm, Ground Version	E0989	$6,000	1,769	1,769	1,769	1,769	1,444
Machine Gun, Heavy, 40mm	E0994	$15,320	614	614	614	614	557
Common Laser Rangefinder System	E1048	$26,236	526	526	526	526	557
Mortar, LW Company, 60mm, M224A1	E1065	$64,652	72	72	72	72	72
Mortar, Medium, 81mm, Extended Range	E1095	$121,855	86	86	86	86	76
Recovery Vehicle, Full-Tracked, Heavy	E1378	$2,748,846	8	8	8	8	20
Rifle, Sniper, 7.62mm, M40A5	E1460	$6,034	132	132	132	132	149
Rifle, Scoped, Special Application, .50 cal.	E1475	$7,500	77	77	77	77	75
High Mobility Artillery Rocket System (HIMARS)	E1500	$2,500,000	20	20	20	20	18
Receiver, Infrared (Stinger)	E1837	$24,068	4	4	4	4	4

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Tank, Combat, Full-tracked, 120mm Gun	E1888	$2,393,439	48	48	48	48	84
Sight, Weapon, Thermal, Medium (MTWS)	E1975	$11,300	1,314	1,314	1,314	1,314	1,222

Note: The above table reflects estimated on-hand quantities against the full wartime requirement. USMC equipping strategy is that the RC maintains on-hand a Training Allowance only. The Training Allowance is the portion of the wartime requirement necessary to conduct home station training. USMC operating concepts rely on global sourcing and pre-positioned assets for combat. When activated, the USMC plans on RC units falling in on either pre-positioned equipment or assets already in theater from previous rotations.

USMCR
Average Age of Equipment

Table 2

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Equip No.	Average Age	Remarks
Aircraft			
Aircraft, Fighter/Attack, F/A-18A++	F/A-18A++	29	
Aircraft, Refueling/Cargo, KC-130T	KC-130T	25	
Aircraft, Refueling/Cargo, KC-130J	KC-130J	9	
Aircraft, Utility/Cargo, UC-12W	UC-12W	5	
Aircraft, Utility/Cargo, UC-35C	UC-35C	16	
Aircraft, Utility/Cargo, UC-35D	UC-35D	12	
Aircraft, Fighter, F-5F	F-5F	37	
Aircraft, Fighter, F-5N	F-5N	35	
Helicopter, Attack, AH-1W	AH-1W	25	
Helicopter, Cargo, CH-53E	CH-53E	27	
RQ-7B Shadow System	RQ-7B	7	
Communications/Electronics			
High Frequency Vehicle System	A0067	10	
Radio Set	A0153	7	
Support Wide Area Network (SWAN) D V1	A0234	3	
Very Small Aperture Terminal - Medium (VSAT-M)	A0241	3	
SWAN D V3	A0242	2	
SWAN D MRT	A0244	3	
Combat Operations Center (COC) V(3)	A0254	7	
Combat Operations Center (COC) V(4)	A0255	7	
Combat Operations Center (COC) V(2)	A0271	6	
Radio Set	A1957	18	
Motor Transport			
Truck, Armored, Cargo, 7-ton, w/Winch Reducible DFCS	D0003	11	
Truck, Armored, XLWB Cargo, 7-ton, w/Winch Non-reducible	D0005	11	
Truck, Armored, Dump, 7-ton, w/Winch Non-reducible	D0007	11	
Truck, Tractor, 7-ton, w/o Winch	D0009	11	
Truck, Armored, Tractor, 7-ton, w/o Winch Non-reducible	D0013	11	
Truck, Armored, Wrecker, 7-ton, w/Winch Reducible	D0015	9	
Truck, Utility, Expanded Capacity, Enhanced, M1152	D0022	9	
Truck, Utility, Expanded Capacity, Armament Carrier	D0030	9	
Truck, Utility, Expanded Capacity, G2/GP Vehicle	D0031	9	
Truck, Utility, ECV, TOW Carrier, Armored	D0032	9	
Truck, Utility, Expanded Capacity, Fully-armored (2-door)	D0033	9	
Truck, Utility, Ground Mobility Vehicle, Armored (4-door)	D0034	9	
Truck, Cargo, 7-ton, w/Winch	D0198	11	
Semitrailer, Refueler, 5000 gal	D0215	8	
Semitrailer, Low-bed, 40-ton	D0235	13	
Trailer, Cargo, Resupply for HIMARS	D0861	11	

USMCR
Average Age of Equipment

Table 2

Nomenclature	Equip No.	Average Age	Remarks
Truck Cargo 22.5-ton, 10X10, LVSR	D0886	5	
Truck, Tractor, 10X10, LVSR	D0887	3	
Truck, Ambulance, 4 Litter, Armored, HMMWV	D1001	14	
Truck, Ambulance, 2 Litter, Soft Top, HMMWV	D1002	14	
Truck, RTAA, XLWB Cargo, 7-ton, w/Winch	D1062	11	
HIMARS, Armored Resupply Vehicle, Non-reducible	D1063	7	
Truck, Firefighting, Aircraft and Structure	D1064	27	
Truck, Dump, 7-ton, w/Winch	D1073	11	
Truck, Wrecker, 10X10, LVSR	D1214	3	
Ordnance & Weapons			
Saber System	E0055	5	
Javelin	E0207	5	
Equipment Set, Night Vision	E0330	29	
Howitzer, Lightweight, Towed, 155mm	E0671	7	
Assault Amphibious Vehicle (AAV), Command	E0796	41	
AAV, Personnel	E0846	41	
AAV, Recovery	E0856	41	
Launcher, Rocket, Assault, 83mm	E0915	33	
Launcher, Tubular F/GM TOW Weapon System	E0935	29	
Light Armored Vehicle (LAV), Anti-Tank	E0942	23	
LAV, Command & Control (Battalion)	E0946	21	
LAV, Light Assault, 25mm	E0947	24	
LAV, Logistics	E0948	22	
LAV, Mortar	E0949	23	
LAV, Maintenance/Recovery	E0950	28	
Recovery Vehicle, Full-Tracked, Heavy	E1378	9	
High Mobility Artillery Rocket System (HIMARS)	E1500	7	
Tank, Combat, Full-tracked, 120mm Gun	E1888	18	

USMCR

Table 3

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Weapons and Combat Vehicles			
Assault Amphibious Vehicle (AAV7A1) Product Improvement Program (PIP)	$314,000	$320,000	$326,000
Light Armored Vehicle (LAV) PIP		1,075,000	1,095,000
155mm Lightweight Towed Howitzer	1,133,000	9,000	6,000
High Mobility Artillery Rocket System	3,163,000	3,183,000	3,096,000
Modification Kits	493,000	2,492,000	2,544,000
Guided Missiles and Equipment			
Javelin	165,000	175,000	180,000
Anti-Armor Weapons System-Heavy (AAWS-H)	221,000	211,000	188,000
Communications and Electronics Equipment			
Repair and Test Equipment	1,232,000	1,243,000	1,274,000
Items under $5M (Communications & Electronics)	47,000	46,000	48,000
Radar Systems	3,875,000	3,639,000	6,607,000
Ground/Air Task Oriented Radar (G/ATOR)			119,953,000
Fire Support System	2,524,000	2,784,000	2,982,000
Intelligence Support Equipment		1,003,000	1,068,000
Distributed Common Ground System (DCGS)-Marine Corps	533,000		
Common Computer Resources	10,000	10,000	10,000
Command Post Systems	2,457,000	1,446,000	2,603,000
Radio Systems	543,000		
Communications Switching & Control Systems	4,172,000	4,470,000	4,503,000
Support Vehicles			
Commercial Cargo Vehicles		8,900,000	194,000
Motor Transport Modifications	741,000	192,000	222,000
Family of Tactical Trailers	739,000	661,000	684,000
Engineer and Other Equipment			
Environmental Control Equipment	18,000	1,401,000	3,208,000
Tactical Fuel Systems	78,000	1,827,000	2,889,000
Power Equipment Assorted	3,180,000	1,784,000	1,847,000
Amphibious Support Equipment	320,000	273,000	201,000
Explosive Ordnance Disposal (EOD) Systems	2,850,000		
Family of Construction Equipment	2,843,000	2,617,000	2,302,000
Items less than $5M (Engineer)	591,000	613,000	1,077,000
Spares and Repair Parts	4,380,000	361,000	
Total	**$36,622,000**	**$40,735,000**	**$159,107,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Helmet Display Tracker System (HDTS) A and P Kits (AH-1)	$6,656,304		
HDTS Helmets (AH-1)	1,433,500		
HDTS Fast Characterization Tool (FACT) (AH-1)	837,435		
HDTS Ready Room Units (AH-1)	300,174		
HDTS Advanced Sight & Display Computer (ASDC) Loader (AH-1)	81,831		
Undistributed Funds	50,690,756		
FY 2015 NGREA Equipment			
KC-130J Fuselage Trainer		$18,000,000	
KC-130T Weather Radar Replacement		1,700,000	
AH-1Z Flight Training Device		17,045,013	
Wideband Manpack Tactical Radios AN/PRC-117G		8,640,000	
Marine Corps Common Hardware Suite General Purpose Tactical Laptop Computer		6,738,060	
Marine Corps Common Hardware Suite Rugged Tablet Convertible Laptop Computer		717,707	
Marine Corps Common Hardware Suite Rugged Tactical Laptop Computer		513,520	
Marine Corps Cyber Range Node Training and Simulation Environment		4,251,000	
Visual Database Upgrade for CH53E Flight Training Device		2,377,000	
Geospatial Mapping Computers		17,700	
Total	**$60,000,000**	**$60,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

Table 5

USMCR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019 Qty	Remarks
Aircraft, Refueling/Cargo, KC-130J	KC-130J		+2	+1	New aircraft deliveries
Helicopter, Attack, AH-1W	AH-1W	+5	+1	-13	HMLA-775 will stand up in Camp Pendleton
Helicopter, Attack AH-1Z				+7	
Helicopter, Utility, UH-1Y	UH-1Y	+4			UH-1Ns being replaced with UH-1Ys
Tilt-rotor, Cargo, MV-22B	MV-22B	+12			Replacing CH-46Es with MV-22B transfers from AC

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
Helicopter, Cargo, CH-46E	CH-46E	-13	-13				
Helicopter, Utility, UH-1N	UH-1N	-6	-6				
FY 2013 P-1R Equipment							
Weapons and Combat Vehicles							
Light Armored Vehicle (LAV) Product Improvement Program (PIP)				$941,000	$0		
Assault Amphibious Vehicle (AAV7A1) PIP				162,000	162,000		
Modification Kits				4,825,000	4,825,000		
Guided Missiles and Equipment							
Follow-on to Shoulder-Launched Multipurpose Assault Weapon (SMAW)				4,502,000	0		
Communications and Electronics Equipment							
Combat Support System				161,000	0		
Air Operations Command and Control (C2) System				276,000	276,000		
Fire Support System				572,000	572,000		
Common Computer Resources				1,329,000	1,329,000		
Command Post Systems				1,605,000	1,605,000		
Engineer and Other Equipment							
Environmental Control Equipment				4,199,000	4,199,000		
Container Family				668,000	668,000		
FY 2013 NGREA Equipment							
Flight Training Device, MV-22B						$12,000,000	$0
KC-130J Weapons System Trainer						28,198,000	26,049,526
KC-130J Cockpit Procedures Trainer						7,078,000	5,081,670
KC-130T WX Radar Replacement and GPS						12,546,784	15,886,716
KC-130T Electronic Propeller Control System (EPCS)						8,567,237	4,179,152
KC-130T Hose Reel Improvements						1,723,008	1,723,008
KC-130T Tactical Air Navigation (TACAN) Upgrade						740,880	346,280
F-5 Electronic Attack (EA) Digital Radio Frequency Memory (DRFM) Pods						3,993,000	7,353,145
F-5N Terminal Collision Avoidance System TCAS/TAWS						3,120,000	0
F-5N Helmet Mounted Cueing						2,100,004	0
Covert Lighting Upgrades for C-12W						1,750,020	1,210,186
UC-12W Satellite Phones						120,000	309,834
Combat Operations Center Ver 2 Upgrades						2,567,550	2,567,550
Combat Operations Center Ver 4 Upgrades						1,231,824	1,231,824
Combat Operations Center Capability Set (CAPSET) Software Upgrade						638,587	0
Indoor Simulated Marksmanship Trainer (ISMT) refresh of hardware systems for Reserves						12,224,300	12,224,300

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
AN/TSQ-231A Joint Enhanced Core Communications System (JECCS)						5,400,000	0
Meteorological Mobile Facility (Replacement) [METMF(R)] Weather Forecasting Module						4,000,000	4,000,000
Battlefield Illumination Chutes						1,570,000	1,233,379
Request Pending						10,430,806	0
Tactical Exploitation Group Remote Workstation (TEG-RWS)						0	418,782
MBR II - Multi-Band Radio IMRC-145B						0	2,665,194
Data Distribution System Module (DDS-M) Upgrades						0	1,498,323
Night Targeting System Upgrade						0	13,600,000
F-5 Service Life Extension/STABS						0	8,262,855
Tactical Video Data Link Installation						0	390,420
UH-1 Flight Training Device sparing						0	2,700,000
MV-22 Flight Training Device sparing						0	2,275,000
AH-1 Linkless Feed System						0	4,792,856
Total				**$19,240,000**	**$13,636,000**	**$120,000,000**	**$120,000,000**

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Table 7

Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No

Service Does Not Use Substitution to Satisfy Major Item Equipment Requirements

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	KC-130J Aircraft	28	23	$87,000,000	$2,000,000,000	Fielding of the KC-130J begins in FY 2015 and continues through FY 2029. The extended nature of this fielding timeline results in significant operational and training compatibility issues as the Active Component (AC) has already fielded the KC-130J. Only 10 aircraft are programmed for the Reserve Component (RC) within the FY 2018 Future Years Defense Program (FYDP).
2	MQ-21 Small Tactical Unmanned Aircraft System (STUAS)	3	3	$13,333,333	$40,000,000	RC fielding delayed due to budgetary constraints. Lack of systems creates significant capability gap between RC and AC. Unable to execute entire range of assigned mission-essential tasks (METs) without system procurement.
3	Light Armored Vehicle Antitank (LAV-AT) Modernization	24	24	$1,541,666	$37,000,000	Reserves are maintaining and training on legacy equipment, which precludes integration with active forces. The current shortfall cannot be satisfied through realignment of Procurement Marine Corps (PMC) funding from other competing LAV requirements. (i.e., Mobility and Obsolescence Upgrades).
4	KC-130J Training Suite	3	1	$19,500,000	$19,500,000	Devices are integral to conversion training and achieving systems proficiency prior to delivery of aircraft. Shortfall requires significant increases in travel costs to use AC devices.
5	Flight Training Device, AH-1Z	3	3	$16,000,000	$48,000,000	The AH-1Z Viper aircraft is scheduled for delivery to the RC during FY 2019. Devices are integral to conversion training and achieving systems proficiency prior to delivery of aircraft. Lack of simulator imposes significant increases in aircraft flight hours to maintain required MET proficiency post aircraft delivery.

Chapter 4
United States Navy Reserve

I. Navy Overview

A. Navy Planning Guidance

America's Navy enforces the Nation's strategic interests by operating forward. At any given moment, approximately one-third of the United States Navy is deployed around the world with over 41,000 sailors who are underway on ships and submarines or deployed in expeditionary roles operating across the globe to protect our Nation's interests. As stated by the Chief of Naval Operations (CNO), "This is our mandate: to be where it matters, when it matters."[1]

The 2014 Quadrennial Defense Review describes the Department of Defense (DOD) role in protecting and advancing our Nation's interests around the globe and sustaining American leadership by protecting the homeland, building global security, and projecting power to win decisively. These core capabilities enable the Navy to meet the objectives set forth in the 2012 Defense Strategic Guidance *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*. To assist in achieving these objectives, it is imperative that the United States Navy maintains, trains, and equips combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. In this era of increased fiscal constraints and in order to achieve a balanced program, the Navy's focus remains on building and delivering the appropriate capability and capacity while factoring in resource limitations.

The United States Navy Reserve provides strategic depth and delivers operational capability to the Navy, Marine Corps, and joint forces. While maintaining an increased operational pace for over 14 years, the Navy Reserve also provides essential surge capacity for naval forces and is a key component of the Navy's Total Force. Since September 11th, 2001, the contributions of the Navy Reserve in support of the Total Force have been extraordinary:

> The Navy Reserve is a valuable hedge against an uncertain and challenging security environment; they augment the Fleet with unique skills to see us through any challenge. Since 9/11, Reserve contributions to the active duty Navy component have been significant—over 73,000 Navy Reserve Sailors were mobilized in support of global contingency operations, providing tens of thousands of "boots on ground" in Iraq, Kuwait, Bahrain, Afghanistan, and the Horn of Africa, as well as supporting key missions like those at Joint Task Force-Guantanamo Bay. On any given day, nearly 25 percent of the Navy Reserve force directly supports the Navy worldwide—about 15,000 sailors.[2]

Going forward, the Navy Reserve will continue to play an integral role in virtually every Navy mission. Therefore, fully aligning and resourcing Navy Reserve equipping plans and policies will

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[1] CNO before the Senate Subcommittee on Defense, Committee on Appropriations, *FY 2016 Department of the Navy Posture*, March 4, 2015, p. 34.
[2] Ibid.

serve as a cost-effective force multiplier in support of Navy and joint force requirements and the Navy's tenet of *Warfighting First*.

B. Navy Equipping Policy

Navy policy, which applies to both Active Component (AC) and Reserve Component (RC), states that all units will be equipped to accomplish assigned missions and shall have an equipment and distribution program that is responsive to mission requirements, balanced, and sustainable. Priorities for distribution of equipment should be given to units scheduled to be deployed and/or employed first. Equipment priorities for Ready Reserve units will be established using the same methodology as AC units having the same mobilization mission.

Within the Fleet Readiness Enterprise, the five warfare enterprises (Naval Aviation Enterprise, Surface Warfare Enterprise, Undersea Warfare Enterprise, Naval Information Dominance Enterprise, and Naval Expeditionary Combat Enterprise) each identify RC requirements for new equipment as part of the Navy's resource-allocation process. This equipment is used to generate and sustain fleet readiness during at-home training and forward-based operations and is ready to surge in response to a request for forces.

C. Plan to Fill Reserve Component Equipment Mobilization Requirements

The Navy's Total Force concept has proven successful over the last 14 years of combat operations. AC and RC Sailors operate interchangeably in many capability areas. Major operational and contingency plans require RC units to deploy as integrated parts of Navy's warfighting plan. Reserve equipment allocation mirrors that of the AC and plays a significant role in how the Navy executes its missions by the AC using its equipment, the RC using its equipment, or a combination of both. Equipment requirements and shortfalls are identified during the resource allocation process, which the CNO then prioritizes.

The Navy Reserve maintains equipment as training or mobilization assets. In many instances, the RC will deploy with AC equipment that is stored at major embarkation sites in the United States or pre-positioned overseas as war reserve materiel stock. Pre-positioned assets are distributed according to operational requirements for both AC and RC.

D. Initiatives Affecting RC Equipment

In 2015, The Chief of Navy Reserve promulgated a strategic plan *Navy Reserve Vision 2015–2025: Our Course to the Future*. The plan lays out five strategic imperatives:

1. Keep pace with Navy's future capabilities
2. Maintain a ready Force for tomorrow
3. Actively employ each Sailor's unique capabilities
4. Deliver technologically advanced solutions
5. Develop transformational leaders

In alignment with the Navy Reserve Vision, the Navy has multiple ongoing initiatives to modernize and improve RC operational capabilities in support of the strategic imperative to keep pace with the Navy's future capabilities. Significant examples follow.

- **C-40A Clipper**: The Navy Reserve accepted the delivery of two C-40A cargo aircraft in FY 2015. The C-40A is a replacement for the recently retired C-9B and aging C-20G aircraft and remains a critical RC requirement. The minimum inventory requirement is 17 C-40A aircraft. To date, 14 of the 17 have been procured through a combination of National Guard and Reserve Equipment Appropriation (NGREA) funds, Congressional adds, and the President's Budget. One additional aircraft is under contract with an estimated delivery in early FY 2017, bringing the total inventory to 15 aircraft. Funding sources for these aircraft are displayed in Table 4-1.

Table 4-1. RC C-40A Funding

FY	Quantity	Funding source
1997	2	NGREA
1998	1	NGREA
1999	1	NGREA
2000	1	President's Budget
2001	1	Congressional add
2003	1	Congressional add
2004	1	President's Budget
2005	1	President's Budget
2009	2	President's Budget
2010	1	President's Budget
2011	1	Congressional add
2012	1	NGREA
2013	1	Congressional add

- **F/A-18 Hornet**: The Navy Reserve operates 26 legacy F/A-18A+ aircraft divided between two squadrons that execute adversary support missions to train fleet naval aviators and also provide a critical strategic reserve capability. However, these aging aircraft (average age is 29 years) are far less capable than the modern F/A-18E Super Hornets. As a result, despite extremely experienced pilots flying the F/A-18A+ aircraft, these squadrons are facing challenges in meeting the capability requirement for advanced strike tactics and simulating current advanced threat aircraft. As Naval Aviation prepares for potential adversaries, the Navy Reserve's Hornets will need to be recapitalized with next generation capability to continue to provide realistic threat-representative training for fleet naval aviators. They also offer a critical strategic reserve capability, interoperable with AC F/A-18E/F and F-35C aircraft, to support Global Force Management Allocation Plan (GFMAP) requirements.

- **Unmanned Aircraft Systems (UAS)**: The Navy is actively planning to integrate RC manpower to meet requirements in the newest generation of UAS platforms. These platforms

include the MQ-4C Triton and the MQ-8B/C Fire Scout. The periodic and predictable nature of the Triton mission is particularly well suited for Reserve Sailors. RC manpower will directly contribute to the warfare mission and reduce overall program costs.

- **F-5 Tiger II**: The Navy Reserve operates the F-5 Tiger II aircraft to provide adversary support for the AC. While the F-5 is very economical and a suitable aircraft to train fleet pilots in basic fighter maneuvers, Navy air-to-air tactics have advanced at such a pace that the F-5 is currently unable to simulate advanced air-to-air threats. Investing in F-5 capability upgrades will drastically improve their ability to provide advanced, threat-representative air-to-air training to deploying carrier air wings and student pilots. Furthermore, current Navy adversary capacity is able to meet only 46 percent of the fleet's annual sortie requirement. Procuring additional F-5s at a fraction of the cost of other modern fighter aircraft will help alleviate this shortfall. The cost-effective F-5 is expected to be in use through at least 2025, and these procurements provide a relatively low cost option to aid in solving these deficiencies.

- **P-8A**: Advancing structural fatigue across the Maritime Patrol and Reconnaissance P-3C aircraft inventory continues to be a Total Force issue. Due to a fleet-wide shortage of P-3C aircraft, AC utilization of RC capacity has become a necessity and has been fully incorporated into AC training and readiness, forward-deployment, and P-3C sustainment/sundown plans. RC P-3C squadrons are planned to be continuously deployed until their aircraft are retired. There are currently no plans to extend the P-3C service life or maintain P-3C maintenance support capabilities beyond the planned P-8A full operational capability projection of FY 2021. The Navy Reserve must retain Maritime Patrol and Reconnaissance capability; RC patrol squadrons will need to be resourced with the P-8A aircraft.

- **C-130T/KC-130J**: The Fleet Logistics Support Wing C-130T aircraft are a crucial part of Navy-unique fleet-essential airlift (NUFEA) requirements. They serve as a connector between strategic airlift points and provide global logistics support while specializing in providing airlift for oversized cargo. While other Services are replacing their legacy C-130 aircraft with the new C-130J, the Navy has extended the life of its C-130Ts through an innovative Aircraft Obsolescence Upgrade (AOU) that will enable the Navy's C-130Ts to continue supporting fleet requirements and meet Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) airspace compliance flight rules. Twenty of the 24 aircraft are currently scheduled to receive this upgrade. This upgrade will increase NUFEA aircraft availability for worldwide logistics tasking. Consideration should be given to funding AOU installs on the remaining four aircraft so the entire C-130T fleet can achieve cockpit standardization. Long-term, the KC-130J will replace the C-130T.

- **MH-60R:** The Navy recapitalized RC SH-60B Seahawks with seven MH-60R Seahawk helicopters, which are significantly more advanced than the legacy platform. HSM-60, the Navy Reserve's only helicopter maritime strike squadron, will relocate from Naval Air Station (NAS) Mayport, Florida, to NAS Jacksonville, Florida, in February 2016. The squadron continues to support fleet requirements in antisubmarine warfare, antisurface warfare, counter-illicit trafficking operations, search and rescue, and maritime intercept operations.

- **Coastal Riverine Force (CRF)**: In FY 2014, the Navy Reserve CRF assumed the high-value unit escort mission in Groton, Connecticut from the United States Coast Guard. The mission expanded to four locations in FY 2015 and will add another mission location in FY 2016. With the expanded RC mission and force structure, the CRF will require additional resourcing for full modernization and outfitting.

- **Space and Naval Warfare Systems Command (SPAWAR) Reserve Program (SRP):** SPAWAR Military Management Office and the SPAWAR Reserve Program (SRP) acquired equipment that is now core to the SRP Network Operations Support Team (NST) mission. Seventy laptop computers and various other pieces of command, control, communications, computer, and information (C4I) equipment were acquired through the NGREA process in FY 2014 and assembled to produce 15 mobile equipment kits in support of this mission.

  The SRP NSTs travel to fleet concentration areas to deliver foundational information technology training that is not yet fully met by conventional fleet training programs or systems acquisition programs. SRP NSTs currently deliver classroom training, network and security simulation laboratories, and online testing access. The SRP NSTs presently deploy 30 training and certification detachments to train and test nearly 500 Information Dominance Corps students from about 200 fleet commands annually.

E. Plan to Achieve Full Compatibility between AC and RC

In a fiscally constrained environment, the Navy balances many competing priorities to include AC/RC compatibility. Navy must have interoperability between all elements of the Total Force to ensure safe and effective mission accomplishment. However, due to funding limitations, the Navy prioritizes equipment inventories to provide the most capable systems to meet mission requirements while minimizing the effects of equipment shortfalls and incompatibility throughout the fleet.

However, several recent NGREA funded initiatives have greatly improved AC/RC compatibility. Procurement of night vision goggles heads-up display modifications for MH-60R aircraft and the F/A-18A+ joint helmet-mounted cueing system enabled a common fleet configuration that enhanced interoperability. Procurement of littoral combat ship (LCS) Mission Package Training Systems and Operational Post Mission Analysis Trainers allow for individual watchstation qualification and refresher training that enables Sailors to train to the same standards as the AC before encountering a fleet LCS mission module.

II. Navy Reserve Overview

A. Current Status of the Navy Reserve

1. General Overview

In 2010, the *Navy Total Force Vision for the 21st Century (NTF 21)* articulated a collaborative vision for the Navy to meet the demands of modern maritime joint warfighting by delivering a versatile, innovative, diverse, and technology-centric workforce of Active and Reserve Sailors and Navy civilians.

Top Navy Reserve Equipping Challenges

- Aircraft procurement (C-40A, F/A-18E, P-8A, KC-130J)
- Expeditionary equipment procurement (Coastal Riverine Force [CRF], Naval Construction Force [NCF], and Navy Expeditionary Logistics Support Group [NAVELSG])

The Navy Reserve motto of "*Ready now. Anytime. Anywhere*." serves as a pledge to provide ready capabilties when and where needed. As stated by the Chief of Navy Reserve in her testimony before the Senate Subcommittee on Defense,

> The Navy Reserve is more operationally engaged and integrated today than we have been in decades. Our contributions to the Total Force have proven critical to supporting the Navy's strategic plan to meet the nation's security needs as determined by the 2012 Defense Strategic Guidance and the 2014 Quadrennial Defense Review (QDR). The QDR calls for the Joint Force to "rebalance" in four areas, one of which is, "rebalancing capability, capacity, and readiness…" The Navy Reserve specifically assists the Navy in this effort through our operational capabilities, flexible and timely surge capacity, and unique force structure. Full integration of these elements and capabilities provides the Navy and Joint Force flexible and reliable strategic depth and on-demand capabilities that are, "Ready now, Anytime, Anywhere."[3]

The Navy Reserve remains a key asset to combatant commanders for naval and joint force operations. Navy Reserve Sailors represent a highly-skilled and cost-effective workforce that is relied upon as a dependable source of strength to mitigate risk and offset cost. On any given day, approximately one-quarter of Navy Reserve Sailors are on full-time duty either through mobilizations, deployments, Full Time Support, or Active Duty Operational Support. Reserve Sailors filled 75 percent of the Navy's total Individual Augmentee (IA) requirements in FY 2015, enabling AC sailors to remain in critical at-sea billets. Many others provide their expertise on a part-time basis as Selected Reserve (SELRES) participating through Inactive Duty Training, Annual Training, or Active Duty for Training. This ready and accessible force provides required on-call capabilities and is ideally suited to take on periodic and predictable work; when their work is complete, SELRES Sailors return to their civilian careers and leave the Navy payroll. Furthermore, Navy Reserve Sailors bring a reliable surge capability and in doing so provide increased capacity at a reduced cost.

The Navy Reserve increasingly provides needed capabilities for urgent missions and operational support. Recent examples include:

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[3] Chief of Navy Reserve (CNR) before the Senate Subcommittee on Defense, Committee on Appropriations, *FY 2016 Department of the Navy Posture,* April 29, 2015, p. 2.

- Navy leveraged the Navy Expeditionary Combat Command (NECC) Reserve CRF squadrons to assume the high-value unit escort mission from the U. S. Coast Guard and provide essential protection for vessels transiting in and out of port, a critical mission expected to expand in the future.
- In 2015, four Reserve fighter squadrons continued to provide over 80 percent of the Navy's dedicated adversary or "Red Air" support, employing significant tactical aviation expertise to simulate airborne threats to prepare fleet naval aviators for the rigors of air-to-air combat.
- Reserve pilots comprising 13 percent of the instructor cadre in the Naval Air Training Command flew over 20 percent of the total instructional flight hours.

a. Fleet Air Logistics

The Fleet Logistics Support Wing (FLSW) provides 100 percent of the Navy's organic, global intra-theater airlift capability for the fleet and combatant commands (COCOM). The FLSW consists of 12 squadrons and two detachments operating C-40A, C-20D/G, C-37A/B, and C-130T aircraft.

The C-40A is the designated replacement for Navy Reserve C-20G aircraft. It offers increased range, payload, reliability, and the unique capability of carrying hazardous cargo and passengers simultaneously. Significant airlift recapitalization was initiated in FY 1997 when NGREA funding was provided to procure the first two C-40A aircraft, thus initiating the replacement effort for the C-9B fleet. Thirteen more C-40As were procured between FY 1998 and FY 2013 through a combination NGREA, Congressional adds, and the President's Budget. Today, 14 C-40As are operated by VR-56 at NAS Oceana, Virginia;VR-57 at NAS North Island, California;VR-58 at NAS Jacksonville, Florida;VR-59 at NAS Joint Reserve Base (JRB) Fort Worth, Texas; and VR-61 at NAS Whidbey Island, Washington. C-40A number 15 will be delivered in early FY 2017.

The C-130T remains the most requested airlift asset in the Navy Reserve fleet because of its versatile capability. The recent transfer of five C-130T aircraft from the Marine Corps brought the fleet size to its designated minimum inventory requirement of 24. However, the C-130T avionics systems continue to face resourcing challenges that threaten future compliance with international CNS/ATM flight standards. The C-130T fleet is not uniformly configured, and the local training sites have dissimilar training devices. Mission sustainment will be accomplished with the current aircraft inventory in the short term and will be enhanced by the ongoing AOU effort. However, in the long term the Navy C-130T fleet's capability will be limited due to the lack of cockpit standardization, a lack of a certified Global Positioning System, and a lack of enhanced altitude reporting capability. The current C-130T inventory consists of 24 aircraft operated by VR-53 at Joint Base (JB) Andrews, Maryland; VR-54 at NAS JRB New Orleans, Louisiana; VR-55 at NAS Point Mugu, California; VR-62 at NAS Jacksonville, Florida; and VR-64 at McGuire Air Force Base, New Jersey.

The Secretary of the Navy has designated one C-20D, one C-20G and four C-37A/B aircraft for transportation of designated Flag Officer/General Officer Service officials. The aircraft operate out of VR-1 at JB Andrews, Maryland, and at two forward-deployed executive transport detachment sites at JB Hickam-Pearl Harbor, Hawaii, and NAS Sigonella, Italy.

b. Tactical Aviation

The Tactical Support Wing (TSW) provides a strategic reserve for the Navy's carrier air wings, expeditionary Airborne Electronic Attack (AEA), adversary training, and homeland defense operations. The TSW is comprised of five squadrons: one EA-18G, two F/A-18A+, and two F-5 F/N.

VAQ-209 operates out of NAS Whidbey Island, Washington and has been integral to the AEA GFMAP by deploying continuously in support of COCOM requirements around the world. In FY 2013, the Navy relocated VAQ-209 to NAS Whidbey Island, Washington, from JB Andrews, Maryland, and recapitalized legacy EA-6B aircraft with five EA-18G Growler aircraft. The EA-18G provides full-spectrum AEA to counter enemy air defenses and communication networks, including the employment of anti-radiation missiles. VAQ-209 provides a critical operational and strategic reserve AEA capability by mitigating the Navy's AEA capacity and capability gaps with the Navy's newest and most proficient tactical airframe. The squadron will conduct its first operational deployment in FY 2016.

Two Reserve F/A-18A+ squadrons, VFA-204 at NAS JRB New Orleans, Louisiana, and VFC-12 at NAS Oceana, Virginia, provide a critical strategic reserve strike fighter capability through their ability to augment the carrier air wing on deployments. Due to their age, material condition, and legacy avionics, the Navy is exploring options for recapitalizing the legacy RC Hornet squadrons with newer platforms. The F/A-18E or F-35C would provide sustainable platforms to meet the Navy's future warfare capabilities. Additionally, the two squadrons are the Navy's only dedicated advanced adversary squadrons but currently lack the capacity and capability to meet all fleet adversary requirements. As a result, AC F/A-18 aircraft provide over 30 percent of the Navy's core adversary requirement, decreasing useful service life of AC aircraft and negatively impacting AC aircrew training and readiness. Recapitalizing the two squadrons would meet the capability requirement and decrease the adversary capacity deficit, improving fleet aircraft sustainability and aircrew readiness.

Two F-5 squadrons, VFC-13 at NAS Fallon, Nevada, and VFC-111 at NAS Key West, Florida provide more than 50 percent of the Navy's total adversary support. The Navy utilizes F-5 aircraft and highly experienced fighter pilots to prepare carrier air wings for deployment and to train fleet replacement squadron student pilots in the basics of air-to-air combat. Additionally, adversary force requirements are expanding with the fleet introduction of the EA-18G and F-35C. While adversary support is a critical enabler of warfighting readiness, due to shortfalls in both F-5 capacity and capability, the current program is deemed insufficient by the fleet. Although significant upgrades would be required to increase the capability to an acceptable level to meet fleet training requirements, procuring more F-5 aircraft would decrease the capacity deficit.

c. Maritime Patrol and Reconnaissance Aircraft (MPRA)

The RC operates two maritime patrol and reconnaissance squadrons: VP-62 at NAS Jacksonville, Florida, and VP-69 at NAS Whidbey Island, Washington. They provide eight percent of the Navy's maritime patrol supporting antisubmarine warfare capacity, combating transnational organized crime operations, homeland defense contingency operations, humanitarian assistance/disaster relief support, and both fleet and North Atlantic Treaty

Organization exercise support. RC squadrons support the CNO's Fleet Response Plan by continuously providing six combat-ready aircrews for worldwide surge operations. Increased COCOM demand, grounding notifications, P-3C sustainment/sundown plans, and increased readiness requirements have resulted in a fleet-wide shortage of P-3C aircraft. The Navy is considering plans to replace the RC P-3C fleet with P-8A aircraft.

d. Rotary-Wing Aviation

Navy Reserve helicopter squadrons perform a variety of fleet support missions including antisubmarine warfare, antisurface warfare, maritime intercept operations, rotary-wing support to special operations forces (SOF), search and rescue, airborne mine countermeasures, and counter-illicit trafficking operations. The RC plans to provide four helicopter squadrons and units to the Navy's rotary-wing fleet which are forecast to include HSM-60 at NAS Jacksonville, Florida; Tactical Support Unit East, at NAS Norfolk, Virginia; and HSC-85 and Tactical Support Unit West at NAS North Island, California.

HSM-60 is tasked with fleet requirements including antisubmarine warfare, antisurface warfare, search-and-rescue, and counter-illicit trafficking operations. HSM-60 transitioned from the SH-60B to the MH-60R helicopter, the Navy's premier antisubmarine and antisurface warfare helicopter, after completing its last operational SH-60B deployment in FY 2015. The new aircraft deploy with carrier air wings and surface combatants in support of fleet requirements. HSM-60 has also exclusively sourced two MQ-8B Fire Scout detachments in support of SOF intelligence, surveillance, and reconnaissance (ISR) and made extended deployments embarked on Navy surface combatants.

In FY 2016, the Navy plans to reorganize Navy Reserve's rotary support to SOF by consolidating two squadrons into one squadron and two tactical support units (TSUs). Helicopter Sea Combat (HSC) squadron (HSC-85) will continue to operate out of San Diego, California and the TSUs will be embedded at the Helicopter Sea Combat (HSC) Wing Weapons Schools in Norfolk, Virginia, and San Diego, California. The TSUs were established to retain the RC expertise in the rotary wing support to SOF mission area. Under this concept, RC aircrews have the ability to expand advanced SOF skill sets and expertise throughout AC HSC fleet squadrons. The TSUs will also provide a deployable augment capability to respond to SOF contingencies worldwide.

The RC is also responsible for personnel and equipment associated with seven MH-53E helicopters in support of two composite AC/RC Airborne Mine Countermeasures (AMCM) squadrons. HM-14 and HM-15, both operating out of Norfolk, Virginia, comprise approximately 30 percent of the Navy's total AMCM capability. RC Sailors provide critical operational support for forward-deployed MH-53E detachments in the United States Central Command and United States Pacific Command areas of responsibility.

e. Coastal Riverine Force (CRF)

The Navy Reserve CRF protects critical maritime infrastructure, embarks in military and strategic sealift vessels, and escorts fleet units operating in and around ports across the world. The RC CRF consists of four Coastal Riverine Squadrons (CRS) manned by 2,311 RC Sailors: CRS 1 at San Diego, California; CRS 8 at Newport, Rhode Island; CRS 10 at Jacksonville,

Florida; and CRS 11 at Port Hueneme, California. In FY 2015, the Navy Reserve CRF grew to 15 companies as the AC shifted three companies to RC. The most critical equipping need for the CRF continues to be outfitting squadrons with MK VI Patrol Boats, government-furnished equipment (GFE) upgrades, integration of radio communication systems, and required vehicle alterations to the medium tactical vehicle replacement (MTVR) fleet.

f. Naval Construction Force (NCF)

Navy Reserve NCF units provide a wide range of capability in support of Navy and joint forces including the construction of bridges, airfields, forward operating bases, and roads. Additionally, they undertake civic projects for partner nations. The RC NCF consists of two Naval Construction Regiments (NCR), the 1st NCR at Port Hueneme, California, and the 7th NCR at Newport, Rhode Island, and five Naval Mobile Construction Battalions (NMCB): NMCB 14 at Jacksonville, Florida; NMCB 18 at Tacoma, Washington; NMCB 22 at Port Hueneme, California; NMCB 25 at Fort McCoy, Wisconsin; and NMCB 27 at Chicopee, Massachusetts. The RC NCF is comprised of 4,384 Reserve Sailors and represents almost half of the Total Force NCF capacity.

Although the RC NCF has experienced significant force reductions over the past several fiscal years, they maintain capacity to support GFMAP requirements and unplanned contingencies. RC battalions continue to deploy in a rotation with AC in support of missions in the United States Central Command and United States Africa Command areas of responsibility. As a result, funding is required to upgrade C4I equipment; tactical data networks; GFE upgrades and integration supporting radio communication systems; and required vehicle alterations to the MTVR fleet.

g. Navy Expeditionary Logistics Support Group (NAVELSG)

NAVELSG delivers worldwide expeditionary logistics with AC and RC personnel. Missions include port and air terminal cargo handling, fuels distribution, ordnance reporting and handling, and customs and postal operations. The Navy Reserve makes up 90 percent of NAVELSG and is comprised of 2,433 Reserve Sailors. The RC NAVELSG consists of three Navy Expeditionary Logistics Regiments (NELR) and six Navy Cargo Handling Battalions (NCHB). The three NELRs are the 2nd NELR at Cheatham Annex in Williamsburg, Virginia; the 4th NELR at Blount Island Marine Corps Base, Jacksonville, Florida; and the 5th NELR at NAS Point Mugu, California. The six NCHBs are NCHB 5 at JB Lewis-McChord, Washington; NCHB 8 at Lakehurst, New Jersey; NCHB 10 at Yorktown, Virginia; NCHB 11 at Blount Island Marine Corps Base, Jacksonville, Florida; NCHB 13 at Gulfport, Mississippi; and NCHB 14 at Port Hueneme, California.

Funding is required to enhance NAVELSG mission readiness with the procurement of a C-5/C-17 loading simulator. Additional funding is required for GFE supporting integration and upgrades for radio communication systems, vehicle alterations to the MTVR fleet, and various additional required Table of Allowance items.

h. Combat Camera (COMBATCAM)

COMBATCAM consists of one 42 Reserve Sailor detachment at Naval Base Norfolk, Virginia. This detachment serves as a visual information acquisition unit providing aerial and surface

visual documentation for combat operations, joint and fleet exercises, and contingency operations throughout the joint force. Additionally, COMBATCAM provides the only Navy subsurface documentation capability.

i. Navy Expeditionary Intelligence Command (NEIC)

NEIC delivers maritime expeditionary intelligence forces that respond to rapidly evolving irregular warfare requirements. Functional area capabilities provided by NEIC include tactical ground and maritime human intelligence, intelligence exploitation, expeditionary intelligence analysis, and tactical electronic warfare/information operations. With unique access to areas normally inaccessible to more traditional intelligence assets, NEIC gives expeditionary and joint forces timely, actionable intelligence. NEIC includes 143 Reserve personnel and operates out of Dam Neck Annex in Virginia Beach, Virginia.

j. Surface Warfare Enterprise (SWE)

Approximately 2,500 Sailors support the Surface Warfare Enterprise across 83 RC units and detachments. These RC personnel support the following major surface and amphibious warfare areas: littoral combat ships (LCS), ballistic missile defense, surface readiness detachments, naval beach group, assault craft units, beachmaster units, amphibious construction battalions, tactical air control, and Afloat Culture Workshops. Additionally, RC Sailors provide critical operational support to worldwide surface deployments.

The Navy Reserve LCS mission is to provide and maintain trained RC Sailors and equipment in an optimized state of readiness to support global LCS mission requirements. The Navy will fund over 1,000 RC billets for 20 LCS units by FY 2019. RC LCS units are organized to provide strategic support for warfighting requirements as well as operational support during normal and surge operations. LCS units will augment the LCS squadron staffs, seaframe maintenance, shipboard antiterrorism/force protection watches, and mission module support, delivering a minimum of 20,000 days of support per year. Maintenance of LCS seaframes is the chief focus area of the RC effort and constitutes approximately 60 percent of the overall RC contribution to the LCS Program.

In support of the beach group mission, Navy Reserve owns and operates ten Maritime Prepositioning Force Utility Boats (MPFUB). Assault Craft Unit One from Naval Amphibious Base in Coronado, California, and two RC detachments use the MPFUBs to conduct assault follow-on echelon offload missions, provide relief for AC crews as required, and cover homeport requirements for deployed units.

k. Naval Special Warfare (NSW)

Reserve Naval Special Warfare Group Eleven (NSWG-11) oversees two RC sea-air-land (SEAL) teams that are charged with deploying forces worldwide in support of NSW and joint SOF requirements; SEAL Team 17 at Coronado, California; and SEAL Team 18 at Dam Neck, Virginia. In addition, the NSW RC cadre includes 15 Navy Reserve Units (NRUs) and 16 regional NSW detachments. In total, RC NSW capacity will be 1,050 AC and RC billets as of FY 2017. Approximately seven percent of total SEAL and special warfare combatant-craft crewmen manning resides in the Navy Reserve. This is in addition to a variety of specialized intelligence, aviation, and construction personnel providing key support to SOF operations.

With an increasing emphasis on Reserve capability to support global NSW operations, NSW is reorganizing its RC to provide critical tactical UAS capability on a steady-state basis. These UAS elements provide key ISR support to Theater Special Operations Commands in support of COCOM SOF requirements. The RC is expected to resource 25 percent of the total NSW tactical UAS capability by FY 2017.

l. Military Sealift Command (MSC)

MSC is the Maritime Component Commander for Sealift Missions for United States Transportation Command (USTRANSCOM) and the Type Commander for MSC ships for United States Fleet Forces Command. MSC is the seaborne transportation provider for DOD with the responsibility of providing worldwide strategic sealift and ocean transportation for all military forces. Nearly 900 Reserve Sailors are assigned to 44 MSC units worldwide. MSC is represented by five geographic area commands (Atlantic, Pacific, Europe, Middle East, and Far East), which exercise tactical control of all assigned USTRANSCOM and MSC forces assigned to the numbered fleet commanders. When mobilized, RC units take charge of establishing MSC port offices to assist with sealift operations. Navy Reserve cargo afloat rig teams (CART) are utilized to augment civil service mariners aboard combat logistics force ships, which transfer food, fuel, ammunition, and other critical supplies to combatant ships at sea. CARTs are composed of Reserve Sailors highly trained in underway replenishment operations for both connected and vertical replenishment.

m. Submarine Force

The Navy submarine force is supported by 1,600 Reserve Sailors. The RC submarine force's four main missions are undersea warfare operations, expeditionary maintenance, force protection, and submarine rescue. RC Sailors that support undersea warfare operations enable the AC to sustain 24/7 antisubmarine warfare operations both ashore and at sea. RC expeditionary maintenance Sailors augment submarine tender crews to provide maintenance support to deployed submarines. They also deploy to Guam to augment guided-missile submarine crews during forward-deployed maintenance periods. RC Sailors also provide force protection to vessels away from their home port. Additionally, the RC provides 56 percent of the submarine force’s undersea rescue team and is ready to execute a submarine rescue anywhere in the world within 72 hours.

n. Space and Naval Warfare Systems Command (SPAWAR)

As the Navy’s Information Dominance systems command, SPAWAR develops, delivers, and sustains communications and information capabilities for warfighters, keeping them connected around the world, on land, at sea, and in flight. With a space support activity, two system centers, and partnerships with three program executive offices, SPAWAR provides the hardware and software needed to execute Navy missions. SPAWAR is at the forefront of research, engineering, and acquisition to provide and sustain fleet capabilities.

SPAWAR delivers information dominance capabilities in the fields of ISR, command and control, cyber warfare, information and knowledge management, and meteorology and oceanography. SPAWAR works closely with the fleet, systems commands, and Navy partners to seamlessly and effectively deliver capability by acquiring and integrating sensors,

communications, weapons, information and control systems for existing and future ships, aircraft, submarines, and unmanned systems.

Many RC Sailors who support SPAWAR leverage advanced technical degrees and extensive technical experience. SPAWAR's 400 Reservists bring directly applicable knowledge, skills, and abilities that directly support SPAWAR missions.

o. Naval Air Systems Command (NAVAIR)

NAVAIR provides full life-cycle support of naval aviation aircraft, weapons, and systems to the Navy and Marine Corps team. The NAVAIR Reserve Program's long commitment to manned systems and recent UAS focus have proven invaluable to the NAVAIR test teams fielding these rapidly evolving capabilities. NAVAIR actively integrates the unique skill sets Reservists bring to bear from their civilian career fields. The Navy Reserve supports NAVAIR with 250 RC personnel.

p. Information Dominance Corps Reserve Component (IDCRC)

The IDCRC operates and maintains nine of 28 Joint Reserve Intelligence Centers (JRIC) in the DOD Joint Reserve Intelligence Program. JRICs are state-of-the-art intelligence centers with a sensitive compartmented information facility and secure intelligence community connectivity that enables personnel from all Services to provide real-world intelligence production to support their gaining commands and agencies. Various DOD agencies and combatant commanders also utilize these sites. From FY 2013–2016, Fleet Cyber Command began staffing cyber protection teams to be made up of roughly 1,000 AC, RC, and civilian personnel from a pool of Information Dominance Corps personnel consisting of cryptologists, intelligence specialists, information technology technicians, and information dominance officers. Currently, the IDCRC is funded to 6,958 RC billets and scheduled to grow to 7,500 billets by FY 2018.

q. Bureau of Medicine and Surgery (BUMED)

RC Navy Expeditionary Medical Training Institute provides tiered readiness training for expeditionary medical facility (EMF) platforms and Marine Forces Reserve. BUMED has a defined requirement to maintain four RC EMF operational platforms and sailors supporting these platforms require ongoing training to maintain currency and qualifications for deployment.

r. Public Affairs

Public affairs officers and mass communication specialists support the Chief of Navy Information (CHINFO) in execution of Department of the Navy public affairs. Their mission is to provide strategic counsel, contribute to operational planning, and execute communication activities in support of national objectives, joint combat operations, and Navy missions. The Navy Reserve public affairs cadre consists of over 500 personnel.

s. Naval Sea Systems Command – Surge Maintenance (SURGEMAIN)

SURGEMAIN Sailors work with their respective shipyard civilian counterparts to conduct modernization and depot-level maintenance and repairs. The SURGEMAIN program provides significant annual cost avoidance over contractor labor at four shipyards: Norfolk, Virginia; Pearl Harbor, Hawaii; Portsmouth, New Hampshire; and Puget Sound, Washington.

SURGEMAIN is a 100 percent RC unit currently funded to 1,500 Reserve billets and scheduled to grow to 2,100 billets by FY 2020.

t. Naval Explosive Ordinance Disposal Technology Division (NAVEODTECHDIV)

RC NAVEODTECHDIV's responsibilities include explosive ordnance disposal technology and logistics management support for the Services. The unit assists in the development of intelligence, equipment, and procedures to counter explosive threats in support of DOD and other government agencies and consists of 50 SELRES personnel.

2. Status of Equipment

a. Equipment On-hand

Table 1 Consolidated Major Item Inventory and Requirements provides projected RC major equipment requirements and on-hand inventories to meet assigned missions.

b. Average Age of Major Equipment Items

With a Reserve Force that maintains increasingly older equipment, particularly RC aircraft, there is a compelling need to recapitalize or modernize some of the Navy Reserve's most expensive assets. Of particular concern are P-3C aircraft (33 years old) and F/A-18A+ aircraft (29 years old) that operate at a significantly higher cost, produce lower readiness rates, and provide lesser capability than their projected replacement platforms. To ensure the Navy Reserve can support AC requirements, the Navy will need to make future investments in RC equipment. *Table 2 Average Age of Equipment* provides the average age of major equipment.

c. Compatibility of Current Equipment with the AC

Achieving equipment compatibility with the AC is critical to the Navy Reserve mission and is one of its top equipment priorities. While procurement and upgrade programs as well as Congressional adds have improved RC equipment capability and compatibility, challenges still remain. For instance, as is noted in *Table 8 Significant Major Item Shortages*, recapitalization of the F/A-18A+ and P-3C fleets remains critical for these squadrons to seamlessly operate with the fleet and provide relevant combat capability. Additionally, for the NCF, NAVELSG, and CRF units, the ability to fully fund equipment requirements remains a significant challenge.

d. Maintenance Issues

Navy Reserve equipment maintenance continues to remain a high priority, and funding for RC readiness mirrors that of the AC. However, due to budgetary challenges, depot throughput limitations, and high operations tempo, both the AC and the RC are confronted with maintenance shortfalls and backlogs. The high operational tempo for the Navy Reserve has accelerated equipment degradation and service-life expenditure. Modernized replacement assets such as the F/A-18E, P-8A, and KC-130J would reduce maintenance issues and produce significant maintenance savings.

e. Modernization Programs and Shortfalls

The Navy has a list of unfunded equipment replacement and modernization requirements. When directed, the CNO develops an Unfunded Priority List (UPL) and forwards it to Congress for

resourcing consideration. In the FY 2016 UPL to Congress, the CNO requested two C-40As for the Navy. In addition to the two C-40As, the highest priority unfunded equipment requirements for the Navy Reserve are provided in *Table 8 Significant Major Item Shortages*.

B. Changes since the Last NGRER

The following statements represent the latest changes since publication of the FY 2016 NGRER:

- HSC-84 is scheduled for decommissioning in FY 2016, which will result in the reduction of 8 HH-60H helicopters from the RC inventory. Two tactical support units, which consist of personnel only, will be stood up, one on each coast.
- HSM-60 transitioned from the SH-60B to the MH-60R helicopter and will relocate from NAS Mayport, Florida, to NAS Jacksonville, Florida, in 2016.
- Navy accepted five excess C-130T aircraft from the Marine Corps, bringing the current total to 24 aircraft, which satisfies the established minimum inventory requirement.
- Navy accelerated the decommissioning of three guided-missile frigates (FFG) by the end of FY 2015, resulting in the elimination of the Navy Reserve FFG fleet.
- Reserve Component F/A-18A+ inventory increased from 22 to 26 aircraft via a transfer from AC inventory to improve RC operational readiness.
- Navy accepted two new C-40A aircraft from Boeing in November 2014 and February 2015, bringing current RC inventory to 14; as a result, VR-61 successfully transistioned from the C-9B to the C-40A.
- Active Component littoral combat ships increased from 6 to 8. The LCS program is on track to meet the current planned inventory of 32 ships by FY 2022.

C. Future Years Program (FY 2017–FY 2019)

1. FY 2019 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2017–FY 2019 major equipment inventories and requirements.

2. Anticipated New Equipment Procurements

In FY 2015, significant NGREA funding was provided to NECC CRF units to procure MK VI Patrol Boats, communications equipment, and visual enhancement systems. This funding will reduce the equipment shortfalls for these units and increase material and operational readiness. *Table 4 NGREA Procurements* provides these procurements.

3. Anticipated Withdrawals and Transfers from AC to RC

Table 5 Projected Equipment Transfer/Withdrawal Quantities provides major RC equipment to be decommissioned and anticipated major equipment transfers between the AC and RC.

4. Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2019

Table 1 Consolidated Major Item Inventory and Requirements and *Table 8 Significant Major Item Shortages* provide RC equipment inventories, shortfalls, and modernization requirements.

D. Summary

Today's Navy Reserve continues to provide vital strategic depth and operational capabilities to the Navy and the Nation. As stated by the Chief of Navy Reserve in her testimony before the Senate Subcommittee on Defense,

> As we consider future force mix and force structure, we will continue to look for opportunities to recapitalize, modernize, and improve our equipment and facilities and, when necessary, mitigate the risks associated with extending their service life. The future Navy Reserve is a Force that keeps pace with warfighting capabilities and technology, while persistently identifying new ways to improve how we support and care for our Sailors and their families.[4]

As the Navy continues to be a vital worldwide defense force, modernized equipment across all RC capabilities and mission areas is essential to ensure compatibility and interoperability. The Navy Reserve's top equipment priorities are the recapitalization of aging aircraft for Reserve aviation squadrons and the purchase of watercraft and expeditionary hardware for CRF, NCF, and NAVELSG units. Continued NECC equipping is necessary to ensure compatibility and the ability to meet operational warfighting demands. Both the Department of Defense and the Navy continue to develop and invest in unmanned systems; as this capability matures, Reserve participation is paramount to minimize cost and capitalize on the civilian technical expertise of our citizen-sailors. Finally, the Navy’s development of innovative cyber capabilities drives reliance on advanced technology. Investments in SPAWAR Reserve equipment aids the command's mission of acquiring, integrating, and fleet capabilities for sensors, communications, weapons, information and control systems for existing and future ships, aircraft, submarines, and unmanned systems.

The RC is tasked to provide rotational forces for traditional missions that are periodic and predictable. It also complements the AC by providing the majority of operational capacity in intra-theater airlift, adversary support, construction and cargo handling battalions, and rotary-wing support to special operations forces. The RC also delivers C4I and cybersecurity integration and expertise.

The current fiscal climate has compelled the Department of Defense to make difficult choices across a wide range of competing requirements in future budget years. The Navy will continue to integrate its Active and Reserve Components into a cohesive Total Force, balancing readiness and modernization priorities to meet operational requirements.

[4] Ibid.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2016 unit cost estimates are provided by the Military Departments.

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Aircraft							
Aircraft, Transport, C-40A (Boeing 737-700)	C-40A	$89,100,000	15	15	15	15	17
Aircraft, Transport, C-130T (Hercules)	C-130T	$28,343,475	24	24	24	24	24
Aircraft, Transport, C-20D (Gulfstream)	C-20D	$21,874,725	1	1	1	1	1
Aircraft, Transport, C-20G (Gulfstream)	C-20G	$32,446,215	3	3	3	3	3
Aircraft, Transport, C-37A (Gulfstream)	C-37A	$48,317,940	1	1	1	1	1
Aircraft, Transport, C-37B (Gulfstream)	C-37B	$64,000,000	3	3	3	3	4
Aircraft, Patrol, P-3C (Orion)	P-3C	$74,471,355	12	12	12	12	12
Aircraft, Electronic Attack, EA-18G (Growler)	EA-18G	$85,000,000	5	5	5	5	5
Aircraft, Fighter/Attack, F/A-18A+ (Hornet)	F/A-18A+	$54,074,610	29	30	30	30	30
Aircraft, Fighter, F-5F (Tiger II)	F-5F	$15,231,060	2	2	2	2	2
Aircraft, Fighter, F-5N (Tiger II)	F-5N	$740,025	30	30	30	30	30
Helicopter, Combat SAR, HH-60H (Seahawk)	HH-60H	$15,564,330	16	16	16	16	16
Helicopter, ASW, MH-60R (Seahawk)	MH-60R	$33,170,000	7	7	7	7	7
Helicopter, Mine Warfare, MH-53E (Sea Dragon)	MH-53E	$22,518,495	7	7	7	7	7
Aviation Simulators							
C-130T Simulator	C-130T SIM	$14,135,000	3	2	2	2	2
F-5 Simulator	2F213	$3,800,000	2	2	2	2	2
FA-18C Simulator	2F193A	$8,500,000	2	2	2	2	2
Naval Beach Group							
Maritime Prepositioning Force Utility Boat	MPF-UB	$1,000,000	10	10	10	10	10
Naval Beach Group Table of Allowance (TOA) Equipment	NBG	$26,705,722	1	1	1	1	1
Naval Construction Force (NCF)							
Construction Battalion Maintenance Unit TOA	CBMU	$14,678,410	2	2	2	2	2
Naval Mobile Construction Battalion TOA	NMCB	$67,965,099	5	5	5	5	5
Naval Mobile Construction Battalion Personal Gear Issue (PGI) TOA	NMCBPGIRC	$6,948,165	5	5	5	5	5
Naval Construction Regiment TOA	NCR	$12,332,758	2	2	2	2	2
Naval Construction Regiment PGI TOA	NCRPGIRC	$1,003,284	3	3	3	3	3
Construction Capability Augment TOA	NCFCCA	$241,843,390	1	1	1	1	1
NCF Training Allowance TOA	NCFTRNG	$83,217,488	1	1	1	1	1
COMBATCAM TOA Equipment	COMBATCAM	$3,322,008	1	1	1	1	1

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Coastal Riverine Force (CRF)							
Squadron Headquarters TOA Equipment	CORIVGRUSQDHQ	$35,739,880	4	4	4	4	4
MK VI Patrol Boat	MKVIPB	$17,900,000	2	5	6	6	6
Mobile Ashore Support Terminal	CORIVFORSO2MAST	$2,629,471	4	4	4	4	4
Radar Sonar Surveillance Central	CORIVFORSO2RSS1	$2,603,501	8	8	8	8	8
Navy Expeditionary Logistics Support Group							
Navy Expeditionary Logistics Regiment Staff TOA	NELRHQ	$2,496,274	2	2	2	2	2
Expeditionary Communications Detachment TOA	NELRECD	$1,211,566	3	3	3	3	3
Navy Cargo Handling Battalion (Commercial) TOA	NAVCARGOBN(C)	$33,586,567	2	2	2	2	2
Navy Cargo Handling Battalion (Tactical) TOA	NAVCARGOBN(T)	$33,373,147	1	1	1	1	1
Navy Expeditionary Intelligence Command (NEIC)							
Intelligence Exploitation Team TOA Equipment	NAVEXINTIEYT	$1,110,285	8	6	6	6	6

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Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Equip No.	Average Age	Remarks
Aircraft			
Aircraft, Transport, C-40A (Boeing 737-700)	C-40A	9	New aircraft delivered
Aircraft, Transport, C-130T (Hercules)	C-130T	22	Five older model USMC KTs recently transferred
Aircraft, Transport, C-20D (Gulfstream)	C-20D	28	
Aircraft, Transport, C-20G (Gulfstream)	C-20G	21	
Aircraft, Transport, C-37A (Gulfstream)	C-37A	13	
Aircraft, Transport, C-37B (Gulfstream)	C-37B	9	
Aircraft, Patrol, P-3C (Orion)	P-3C	33	
Aircraft, Electronic Attack, EA-18G (Growler)	EA-18G	6	
Aircraft, Fighter/Attack, F/A-18A+ (Hornet)	F/A-18A+	29	
Aircraft, Fighter, F-5F (Tiger II)	F-5F	19	
Aircraft, Fighter, F-5N (Tiger II)	F-5N	36	
Helicopter, Combat SAR, HH-60H (Seahawk)	HH-60H	23	
Helicopter, ASW, MH-60R (Seahawk)	MH-60R	6	
Helicopter, Mine Warfare, MH-53E (Sea Dragon)	MH-53E	22	
Aviation Simulators			
C-130T Simulator	C-130T SIM	29	Average age of all three simulators
F-5 Simulator	2F213	7	Average age of two simulators
FA-18C Simulator	2F193A	7	Average age of two simulators
Naval Beach Group			
Maritime Prepositioning Force Utility Boat	MPF-UB	6	
Naval Beach Group Table of Allowance (TOA) Equipment	NBG	2	Average age of major equipment in TOA
Naval Construction Force (NCF)			
Construction Battalion Maintenance Unit TOA	CBMU	17	Average age of major equipment in TOA
Naval Mobile Construction Battalion (NMCB) TOA	NMCB	11	Average age of major equipment in TOA
Naval Mobile Construction Battalion Personal Gear Issue (PGI) TOA	NMCBPGIRC	1	Average age of major equipment in TOA, procure in FY 2016
Naval Construction Regiment TOA	NCR	9	Average age of major equipment in TOA
Naval Construction Regiment PGI TOA	NCRPGIRC	1	Average age of major equipment in TOA, procure in FY 2016
Construction Capability Augment TOA	NCFCCA	15	Average age of major equipment in TOA
NCF Training Allowance TOA	NCFTRNG	9	Average age of major equipment in TOA
COMBATCAM TOA Equipment	COMBATCAM	5	Average age of major equipment in TOA
Coastal Riverine Force (CRF)			
Squadron Headquarters TOA Equipment	CORIVGRUSQDHQ	9	Average age of major equipment in TOA
MK VI Patrol Boat	MKVIPB	1	Average age of major equipment in TOA, procure in FY 2016
Mobile Ashore Support Terminal	CORIVFORSO2MAST	10	
Radar Sonar Surveillance Central	CORIVFORSO2RSS1	10	

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Table 2

Average Age of Equipment

Nomenclature	Equip No.	Average Age	Remarks
Navy Expeditionary Logistics Support Group (NAVELSG)			
Navy Expeditionary Logistics Regiment Staff TOA	NELRHQ	7	Average age of major equipment in TOA
Expeditionary Communications Detachment TOA	NELRECD	5	Average age of major equipment in TOA
Navy Cargo Handling Battalion (Commercial) TOA	NAVCARGOBN (C)	7	Average age of major equipment in TOA
Navy Cargo Handling Battalion (Tactical) TOA	NAVCARGOBN (T)	7	Average age of major equipment in TOA
Navy Expeditionary Intelligence Command (NEIC)			
Intelligence Exploitation Team TOA Equipment	NAVEXINTIET	5	Average age of major equipment in TOA

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Table 3

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Other Aircraft			
KC-130J	$153,718,000	$159,496,000	$209,448,000
Modification of Aircraft			
Adversary Aircraft	5,191,000	2,564,000	3,911,000
H-53 Series	2,796,000	4,645,000	4,575,000
C-130 Series	18,704,000	15,619,000	17,346,000
Cargo/Transport Aircraft (A/C) Series	9,822,000	11,669,000	10,125,000
Other Procurement			
Standard Boats	2,100,000	2,091,000	2,092,000
Construction & Maintenance Equipment	301,000	323,000	329,000
Tactical Vehicles	353,000	19,591,000	7,314,000
Items Under $5M - Civil Engineering Support Equipment	646,000	2,743,000	1,971,000
Supply Equipment	711,000	8,641,000	1,303,000
C4ISR Equipment	1,829,000	1,853,000	1,894,000
Physical Security Equipment	3,676,000	5,299,000	5,327,000
Total	**$199,847,000**	**$234,534,000**	**$265,635,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Coastal Riverine Force (CRF) MK VI Patrol Boat	$32,000,000		
C-130T Simulator Modernization	16,500,000		
C-130T Engine Instrument Display System (EIDS) & Electronic Propeller Control System (EPCS) Kits	4,500,000		
C-40A Fleet Seating Standardization	5,947,272		
C-40A Emergency Vision Assurance System (EVAS)	400,000		
Naval Special Warfare (NSW) Command, Control, Communications, Computers, and Intelligence (C4I) Equipment	2,416,546		
NSW Operating Stock	1,057,182		
Double Lock Recompression Chamber	1,400,000		
Fire Arms Training System (FATS)	750,000		
Underwater Rescue Command (URC) Diving & Medical Equipment	29,000		
FY 2015 NGREA Equipment			
MK VI Patrol Boat		$35,800,000	
CRF Squadron - Navy Enterprise Tactical Command and Control (CRF SQDN NETC2) Outfitting		13,200,000	
Combatant Craft Forward-looking Infrared Sensor (CCFLIR)		6,064,682	
Night Vision Goggles (NVG) Head Up Display (HUD) Mod/Install for HSM-60		2,940,000	
C/KC-130T EF-5992 Fuel Tank Sealant		1,700,000	
Standard Navy Double Lock (SNDL) Recompression Chamber		1,571,000	
C-20G Brake Upgrade		1,050,000	
C-20D/C-20G Emergency Vision Assurance Systems (EVAS)		300,000	
F/A-18A & Joint Helmet Mounted Cueing System (JHMCS)		974,295	
Mission Package Training System (MPTS)		750,000	
Submarine Force (SUBFOR) Reserve Protection Total Obligation Authority (TOA) Equipment		151,985	
Operations Post Mission Analysis (OPMA) Trainers		150,000	
Visit Board Search and Seizure (VBSS) Equipment		133,333	
C-40A Emergency Vision Assurance Systems (EVAS)		214,705	
Total	**$65,000,000**	**$65,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

USNR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019 Qty	Remarks
Aircraft, Fighter/Attack, F/A-18A+ (Hornet)	F/A-18A+	+1			Expecting 1 additional aircraft transfer from VFA-122 in FY 2017 with 29 on-hand at the beginning of FY 2017 for a total of 30 aircraft.

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
Frigate, Guided Missile (Perry Class) Flight III	FFG	+3	+3				
Frigate, Guided Missile (Perry Class) Flight III	FFG	-3	-3				
Aircraft, Early Warning, E-2C (Hawkeye)	E-2C	-6	-6				
FY 2013 P-1R Equipment							
Aircraft							
KC-130J				$25,995,000	$230,329,000		
Modification of Aircraft							
Adversary Aircraft				4,289,000	3,959,000		
H-53 Series				23,701,000	23,670,000		
C-130 Series				19,097,000	9,528,000		
Cargo/Transport A/C Series				26,311,000	18,120,000		
Other Procurement							
Standard Boats				1,105,000	1,104,000		
Passenger Carrying Vehicles				335,000	0		
Construction & Maintenance Equipment				349,000	506,000		
Tactical Vehicles				11,841,000	6,150,000		
Items Under $5 Million - Civil Engineering Support Equipment				1,120,000	5,408,000		
Materials Handling Equipment				1,196,000	800,000		
C4ISR Equipment				1,909,000	1,906,000		
Physical Security Equipment				2,478,000	2,475,000		
FY 2013 NGREA Equipment							
Coastal Riverine Force (CRF) MK VI Patrol Boat						$30,000,000	$30,392,000
CRF Reserve Squadron Navy Expeditionary Combat Command (NECC) Enterprise Tactical Command and Control (NETC2) Communications Equipment						8,800,000	8,800,000
CRF Reserve Squadron Radar Sonar Surveillance Center (RSSC) Convergence Modernization						3,600,000	3,600,000
F-5 Sustainment						5,460,000	5,460,000
F-5 Terrain Avoidance Warning System (TAWS)/Traffic Collision Avoidance System (TCAS) Initiative						1,015,118	566,543
F/A-18+ Multifunctional Information Distribution System (MIDS), Low Volume Terminal (LVT)						18,000,000	18,000,000
F/A-18A+ Joint Helmet-mounted Cueing System (JHMCS)						4,900,000	3,817,810
F/A-18A+ Multifunctional Information Distribution System (MIDS) / Joint Tactical Radio System (JTRS)						0	1,824,154
F/A-18A+ Electronic Attack (EA) Pod Upgrade						84,390	84,390
Joint Task Force-Port Opening (JTF-PO) Surface Port of Debarkation (SPOD) Expeditionary Port Unit (EPU) Table of Allowance (TOA) Equipment						3,138,412	118,367
Naval Special Warfare (NSW) Specialized Weapons						2,720,500	3,297,500
NSW Deployment Operating Stocks						642,818	736,969

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
C-130T Engine Instrument Display System (EIDS) & Electronic Propeller Control System (EPCS) Kits						1,403,913	1,217,880
C-130T Annunciator Light Panel Spacer						300,000	191,893
C-130T Electronic Takeoff and Landing Data (eTold) Cruise Management Data Program						100,000	100,000
C-40A Winglets						1,580,000	1,506,353
C-40A Flight Management Computer (FMC) Fleet Standardization						200,000	174,237
Crew-served Weapons Training System						2,103,000	2,139,606
Small Arms Weapons Training System						1,402,000	1,396,158
Combatant Craft Forward Looking Infrared (CCFLIR) sensor						1,101,000	4,121,281
Portable Environment Protection Equipment						1,975,000	1,300,000
Submarine Force Protection Detachment Standard Mission Equipment						616,000	616,000
Network Fly Away Team Support Package (NFATSP)						364,480	270,329
Electronic Flight Bags						300,579	0
Public Affairs Deployable Multimedia Kit						192,790	192,790
Upward Obligation Procurement						0	75,740
Total				**$119,726,000**	**$303,955,000**	**$90,000,000**	**$90,000,000**

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Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No

Service Does Not Use Substitution to Satisfy Major Item Equipment Requirements

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC top ten prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	C-40A	17	2	$89,100,000	$178,200,000	The C-40 is Navy's designated C-9B and C-20G replacement aircraft. Fifteen of 17 aircraft required to meet Navy's "risk adjusted" minimum inventory objective/red-line requirement have been procured. The procurement of the remaining two aircraft will enable Navy to meet wartime air logistics obligations and retire the C-20G airframe leading to further operational cost savings and improved capability/reliability. The Navy divested of the C-9B in 2014.
2	F/A-18E	24	24	113,000,000	$2,712,000,000	Procures 24 F/A-18E aircraft to equip the RC with an evolutionary upgrade from the F/A-18A. It is a combat tested aircraft and would ensure the RC fighter attack community was compatible with the current air wings and able to seamlessly integrate with the AC.
3	P-8A	8	8	172,205,000	$1,377,640,000	Procures eight P-8As to fill patrol, reconnaissance, and intelligence gathering capability gap. This aircraft would recapitalize the aging P-3C and improve antisubmarine warfare, antisurface warfare, and armed intelligence, surveillance, and reconnaissance (ISR) while leveraging the skills of the many RC pilots that already fly this airframe in their civilian jobs.
4	Small Unmanned Aircraft Systems (PUMA)	10	10	512,888	$5,128,880	The Reserve Component's Naval Special Warfare Group 11 (NSWG-11) deploys tactical elements from its Reserve Seal Teams to support geographic combatant commander (GCC) requirements as articulated in the Global Force Management Allocation Plan (GFMAP). Part of these deployable elements are Reserve SEAL squads (NSW Task Elements), Reserve Special Warfare Combatant Crewman (SWCC) Detachments, and Reserve Unmanned Aircraft system (UAS) Detachments. Each of these tactical elements are required to be issued small, man-portable UAS systems (Group 1 UAS) to support unit organic tactical intelligence, surveillance, and reconnaissance (ISR). These man-portable systems are part of a Special Operations Command (SOCOM) program of record called Small Unmanned Aircraft Systems (SUAS).
5	Air Cargo Training Area C-5 & C-17 Training Simulator	1	1	1,500,000	$1,500,000	The last critical element required to complete a Cargo Center of Excellence. These assets would drastically improve air cargo mission training, which remains one of our in-demand skill sets.
6	Coastal Riverine Force (CRF) MK VI Patrol Boat & Riverine Command Boat	16	10	various	$84,600,000	Funds shortfalls of MK VI Patrol Boats and Riverine Command Boats required to support Reserve CRF training for maritime infrastructure protection (MIP) and high-value unit (HVU) escort in the greenwater.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
7	Joint Light Tactical Vehicle (JLTV)	64	64	$385,000	$24,640,000	JLTVs were recently added to the Table of Allowance (TOA) as a future replacement for the up-armored high mobility multipurpose wheeled vehicles (HMMWVs). These vehicles are unfunded through the Future Year Defense Program (FYDP) and will be required to support training at NECC units, for Field Exercise/Final Evaluation Problem (FEX/FEP) in garrison as well as forward-deployed sites.
8	Navy Expeditionary Logistics Support Group (NAVELSG) TOA Equipment	various	various	various	$13,244,477	Funds in support of overseas contingency operations, humanitarian assistance and disaster relief. Additional funds for tactical vehicles and construction equipment required to support core mission requirements.
9	F-5N	7	7	$740,025	$5,180,175	Requested aircraft consist of seven F-5Ns to reduce systemic community shortages induced by aircraft sharing agreements and double-cycle sortie rates for Fleet Replacement Squadron (FRS) student training, and to ensure the F-5N community retains a two-seat training capability through 2025. Two-seat F-5Ns have greater airframe restrictions, and modeling indicates current two-seaters are unlikely to remain in service until 2025.
10	KC-130J	24	24	$88,000,000	$2,112,000,000	Procures C-130J aircraft to replace the aging and maintenance-intensive C-130T aircraft. The C-130 fleet is a crucial part of Navy-unique fleet-essential airlift (NUFEA) requirements. They serve as a connector between strategic airlift points and provide global logistics support while specializing in providing airlift for outsized cargo.

Chapter 5
United States Air Reserve Components

I. United States Air Force Overview

AIR FORCE MISSION

Fly, Fight, and Win…in Air, Space, and Cyberspace

AIR FORCE VISION

The World's Greatest Air Force, Powered by Airmen, Fueled by Innovation

A. Air Force Planning Guidance

American Airmen provide *Global Vigilance, Global Reach, Global Power* through execution of five core missions: 1) air and space superiority; 2) global integrated intelligence, surveillance, and reconnaissance (ISR); 3) rapid global mobility; 4) global strike; and 5) command and control. The effects the United States Air Force (USAF) creates through these enduring missions are the prerequisite for successful joint operations, support the objectives presented in the 2014 Quadrennial Defense Review (QDR), and meet the military objectives in the 2015 National Military Strategy (NMS). As the most globally engaged air force on the planet, the USAF works in concert with the other Services to deliver our Nation the power, influence, agility, and global reach no other country currently possesses. Although previous plans included intentions to draw down combat forces in Afghanistan with the opportunity to reset and reconstitute forces, recent USAF forces actually sped up as Ukraine and a resurgent Russia occurred, Ebola broke out, and the Islamic State terrorist activity increased. With the increasingly complex set of challenges, constrained and unstable budgets, and the toll of 24 years of continual combat operations, the Air Force was forced to cut capacity which led to capability being equally diminished. The resultant tough choices are reflected in acquisition and modernization priorities distributed among the Active Air Force, Air Force Reserve (AFR), and the Air National Guard (ANG).

In May of 2015, the Secretary of the Air Force (SECAF) and Chief of Staff, United States Air Force (CSAF) unveiled the latest Air Force strategic document, *USAF Strategic Master Plan (SMP)*, which combined with the Air Force Strategy, *America's Air Force: A Call to the Future* comprises the sole strategy for the Air Force. The SMP and its four annexes serve as internal planning documents to guide long-term efforts to organize, train, and equip the Air Force. The SMP aligns long-range Air Force strategy, policy, and guidance with planning and programmatic decisions of senior Air Force leadership in support of national defense and combatant command requirements.

In the SMP, the Air Force considers not only resource and investment choices, but structure, people, and processes as well. Uncertainty about the future, rapid rates of change, and a difficult fiscal environment, require the Air Force to aggressively pursue a path toward institutional strategic agility. The SMP translates *A Call to the Future*'s imperatives (Agility and Inclusiveness) and five strategic vectors (1. Provide Effective 21st-Century Deterrence; 2. Maintain a Robust and Flexible Global ISR Capability; 3. Ensure a Full-Spectrum Capable,

High-End Focused Force; 4. Pursue a Multi-Domain Approach to Core Missions; and 5. Continue the Pursuit of Game-Changing Technologies) into authoritative guidance, goals, and objectives that span the people, places, things, and future of airpower over the next 20 years. The aforementioned imperatives and vectors will guide Air Force human capital management, science and technology, acquisition, and requirements disciplines toward the most beneficial capabilities.

Today's Air Force is both the smallest and oldest it has ever been with the average age of its aircraft being 27 years old. With aging aircraft, stressed fleets, and persistent global demands, senior leaders continue to foresee a more inclusive organization which exercises greater reliance on the ANG and AFR. One of the main assumptions articulated in the SMP is that the Air Force as an institution will remain fundamentally committed to a multi-component approach throughout the Strategy, Planning, and Programming Process. Acquisition and modernization decisions reflect the Air Force's adjustment to the reality that after extending aircraft service lives time and time again, it's time to modernize or replace the older platforms.

B. Air Force Equipping Policy

The threats and challenges we face shape national guidance, which informs the QDR and the NMS. The Air Force then uses the strategic guidance and fiscal guidance to prioritize how we invest the resources we are given to perform the core missions.

Strategic placement of Air Force assets, such as aircraft, is determined through corporate-level processes involving both the Active and Reserve Components (AC and RC). Modernization of aircraft is addressed through a partnership between the requirements of the Core Function Leads for mission capability as well as requirements determined by the RC to meet assigned missions. Unfortunately, the Budget Control Act of 2011 continues to hamper the Air Force's ability to plan for future year budget actions. The sequester level cuts forced difficult choices in the Fiscal Year (FY) 2016 budget proposal with respect to force structure (capacity), readiness, and modernization (capability). While the President's Budget (PB) took a critical step to recovering an Air Force that can outmatch enemies in the most demanding warfighting scenario, even at PB levels the Air Force remains stressed to do what the Nation requires of it. In spite of the challenge, the AC and RC continue to partner to ensure a mission-ready, mission-capable force to fulfill the Air Force's mission, vision, and priorities.

C. Plan to Fill Modernization Shortages in the RC

One of the top three areas of immediate interest in the Air Force is the need to maintain an effective fighting force through capacity, readiness, and modernization. However, ensuring a credible nuclear deterrent capability, advancing space capabilities, and retaining congressionally mandated force structure, came at the expense of modernization. The Air Force seeks the proper balance between readiness of today and modernization to field a full-spectrum capable, high-end focused force of the future. Additionally, increased incorporation of the RC helps provide efficiency. Historically, the Air Force has led the Department of Defense in maximizing the value of the RC, most notably through its unit associations. The Air Force continues to exemplify the relationship through Total Force Integration initiatives and the Total Force Enterprise (an analytical framework used to provide insight into the mix of AC and RC.) Addressing equipment modernization across the Total Force remains a priority.

After the FY 2013 budget process, Air Force leadership recognized the need for a comprehensive review of Total Force requirements and for a strategic plan to ensure proper balance of the strengths of each component to sustain required capabilities. This led the SECAF and CSAF to establish the Total Force Task Force in January 2013, and its successor, the Total Force Continuum (TFC), in October of 2013. Their efforts to develop options that balance Total Force capabilities to meet the full range of current and future mission requirements, and to identify legal, policy, operational, and organizational changes that will enhance our ability to integrate future Total Force capabilities are necessary steps toward meeting RC modernization needs. Additionally, the Air Force incorporated and codified many of the National Commission on the Structure of the Air Force's recommendations into the strategy, planning, and programming process. This included establishing TFC as a permanent staff in the Air Force headquarters. TFC's efforts to identify areas requiring legislative changes and policy relief remain a priority and an integral aspect of the Air Force Deputy Chief of Staff for Strategic Plans and Requirements' work.

Current efforts to streamline organizations through co-location and functional integration include plans to develop initial pilot programs to explore multiple integrated organizational constructs. The Air Force will determine which constructs gain the greatest efficiencies and maintain mission effectiveness while adhering to existing law and maintaining the ability to effectively organize, train, and equip ANG and AFR forces. The Air Force acknowledges the importance of improving the interoperability among components and is therefore conducting research and study to identify and eliminate existing structural and cultural barriers to functioning as one Air Force.

D. Initiatives Affecting RC Equipment

In February of 2015, the SECAF and CSAF presented the Air Force Posture Statement, including the Air Force FY 2016 budget request, to Congress. The budget request reflected the difficult choices the Air Force made under continuous demands for global engagement combined with budget environment uncertainties. The impact of losing $64B in aggregate across five years (FY 2012–FY 2016) on the Air Force's ability to build the most capable force is reflected in proposed cuts to readiness, people, and modernization. The FY 2016 PB request preserved the minimum requirement to meet current strategic guidance. However, even at the PB level, the Air Force as a whole remains stressed, and there are shortfalls.

The strategic documents previously discussed (*A Call to the Future* and the SMP) will provide the guideposts and resourcing vectors with which the Air Force is synchronizing budget and acquisition decisions with strategy for the long term. One of the Air Force's guiding principles steering the strategy and budget process is the plan to maximize the contribution of the Total Force. To meet the Air Force's bold vision for the future, difficult trades between force structure, readiness, and modernization were proposed and certainly impact both the AC and RC.

The 2016 President's Budget directs funding to key nuclear enterprise and space investments, refines FY 2015 PB force structure outcomes, and protects critical FY 2015 PB contested-environment investments (F-35, KC-46, LRS-B, JSTARS recapitalization, T-X, and preferred munitions) while optimizing contribution of the Total Force. The budget request reflects the decision to slightly adjust military end-strength and divest a portion of combat and combat support aircraft. However, to maintain capacity some aircraft will transfer to the ANG and AFR to maintain flying missions impacted by fleet divestitures. Correspondingly, relative to the

PB 2015 end state, the request includes increasing military billets by 2,900 in FY 2016. Of the 2,900 military billets increase, 2,400 will be added to the AC, 500 to the ANG, and 0 to the AFR. In terms of force structure actions across the Future Years Defense Program, PB 2016 proposed changes across the Total Force broadly included the following:

- ANG: Continues A-10 divestment (85) and restores 5 E-8Cs and 17 F-15Cs
- AFR: Continues A-10 divestment (55)
- AC: Re-phases A-10 (143) /E-3 (7)/ U-2 (32) divestments, divests 7 EC-130Hs, shifts 2 JSTARS recapitalization, returns 5 KC-46 and 9 AC/MC-130J aircraft to original profile, adds 18 MQ-9 aircraft, and retains 21 F-15Cs

E. Plan to Achieve Full Compatibility between AC and RC

To maintain an adequate force structure that is ready for the full-spectrum of military operations, the Air Force continues to maximize the contributions of the Total Force. As described in the FY 2016 Air Force Posture Statement, "The Air Force unequivocally relies on three strong components—Active, Guard, and Reserve—to sustain the force required to meet strategic uncertainty, fiscal constraint, and rapidly evolving threats head-on." Reserve Components provide critical capabilities and capacity necessary to execute the national defense strategy and achieving the right balance is critical to shaping the future Joint Force. Finding the optimal balance of roles and strengths among each of the components (Active, Guard, and Reserve) enables the Air Force to be agile, affordable, and capable of meeting the needs of combatant commanders in a demanding and uncertain strategic environment.

The Air Force continues to provide a balanced portfolio of capabilities through five core missions in part through maximizing use of AC and RC forces. The continued research into the right mix of AC and RC as investigated by the TFC, and the tactical level application by Total Force Integration initiatives contribute to building further compatibility between components. To develop options that balance Total Force capabilities to meet the full range of current and future mission requirements, the SECAF and CSAF committed to an assessment on a mission-by-mission basis to identify what capabilities should be placed in the ANG and AFR, and completed 80 percent of the evaluation in 2014. The remaining 20 percent of the evaluation is set to be concluded by the end of 2015. To be effective, the Air Force must be deliberately planned for and appropriately and consistently funded, and the mission evaluations enable informed planning to devise an integrated approach to equipping and exercising all Air Force units. This integrated approach, combined with the lead command and RC requirements driving aircraft-related spending will ensure the Air Force is ready to support the Joint Team. The United States Air Force continues to provide *Global Vigilance, Global Reach,* and *Global Power* for America through balanced support of the five core missions, force structure, readiness, modernization, and recapitalization.

II. Air National Guard Overview

A. Current Status of the Air National Guard

1. General Overview

Top ANG Equipping Challenges

- Adequate funding for weapon system modernization efforts
- Adequate funding to procure necessary air and ground equipment to more effectively support domestic operations and Federal missions

As stated in the *2015 National Guard Bureau Posture Statement*, the Air National Guard (ANG) is fully vested in fighting America's wars and supports each Air Force core mission area as a fully integral member of the Total Air Force for both home and overseas missions, performing nearly 30 percent of the Air Force mission each day and being ready to deploy overseas in 72-hours or less. ANG does this with approximately 1,087 aircraft in its fleet, and contributes nearly 31 percent of the fighter capability, 38 percent of the airlift capability, and 40 percent of the air refueling capability in the Total Air Force.

Another key operational mission of the ANG centers on protecting the homeland and support to civil authorities. Examples include C-130 crews providing relief supplies after a hurricane or, equipped with Modular Airborne Firefighting Systems, releasing over 880,000 gallons of fire retardant on wildfires in FY 2013[1]; assisting U.S. Immigration and Customs Enforcement and U.S. Customs and Border Protection agents with analysts and ground surveillance teams, or deploying the Joint Incident Site Communications Capability allowing first responders, state and Federal agencies to talk to each other during a crisis[2]. To maintain these efforts, the ANG requires the continued modernization and sustainment of its fleet and equipment assets to preserve and increase its war readiness and domestic operations capabilities. Through a combination of Air Force funding and supplemental National Guard and Reserve Equipment Appropriation (NGREA) funds, the ANG can continue fighting America's wars by supporting combatant commanders while protecting the homeland and supporting civil authorities.

2. Current Status of Equipment

ANG support equipment and vehicle inventory fill-rate grew from 93 to 94 percent in the past year. This fill rate increase was largely attributable to an infusion of $40M to the support equipment program from the ANG corporate process.

a. Equipment On-hand

Table 1 Consolidated Major Item Inventory and Requirements provides projected RC major equipment requirements and on-hand inventories to meet assigned missions. These platforms include air refueling, air support, airlift, fighter, and rescue aircraft.

b. Average Age of Major Items of Equipment

The average age of ANG aircraft is now 29.7 years with the oldest platforms being the KC-135R and KC-135T fleet at an average of 54.3 years. Support equipment sustainment for ANG aircraft

[1] *2015 National Guard Bureau Posture Statement,* August 2014.
[2] Ibid.

continues to be a challenge as original manufacturers no longer produce some of these items or may no longer be viable, thereby increasing sustainment costs.

See *Table 2 Average Age of Equipment* for the average age of major equipment items as of October 1, 2015.

c. Compatibility of Current Equipment with AC

Air National Guard equipment requires compatibility with the AC to support Air Force missions. This is critical in allowing the ANG to properly train to AC standards for seamless integration across all components. Additionally, with the transition to the Air Force Network (AFNET) for the ANG portion of the Cyber Security and Control System (CSCS), the CSCS weapon system is 100 percent compatible across the Total Force providing full spectrum network management and defense for AFNET. With continued Congressional funding, the ANG is able to maintain compatibility with the AC on its mission support equipment.

d. Maintenance Issues

The ANG Weapon Systems Sustainment Working Group outlined the following maintenance concerns regarding legacy system sustainment and shortfalls.

Advanced Aircraft Test Equipment: Sustaining an aging fleet of aircraft forces the ANG to utilize old test equipment that is worn and incurs high sustainment costs. This is an inefficient use of manpower and hampers mission reliability. By using updated and digital replacements for certain test equipment items, such as the Air Data / Pitot static test set, 50/60 Stray Voltage Pre-Load Tester, and multi-MDS hydrogen leak detector, we will enable maintenance personnel to troubleshoot and repair aircraft in a fraction of the time required by older methods.

Advanced Support Equipment Required: Present maintenance operations continue to use support equipment developed in the 1970s and 1980s. This senescent equipment is labor-intensive to utilize, costly, and regularly presents significant safety concerns. Industry produces replacement items that are digital, consolidate the functions of multiple items, and are more efficient to operate. Procurement of devices that enhance maintenance efficiency and safety, while improving capabilities, will ultimately lead to improved aircraft availability, diminished operating costs, and enhanced Agile Combat Support capabilities.

C-130 ISO Stands: The C-130 ISO Stand inventory is still unsafe to operate, according to Air Force Occupational Safety and Health (AFOSH) and Occupational Safety and Health Administration (OSHA) standards. Despite their age, (some 41 years old) and constant upkeep to maintain their serviceability, these stands remain essential to completing critical periodic inspections. Alternative practices used by maintainers delay sortie generation, increase inspection times, and curtail aircraft availability. Currently, the ANG is replacing the legacy C-130 ISO Stands to mitigate unnecessary risk and improve aircraft availability.

Flight Line Generator (72kW): New 72kW generators were ordered and delivery began midyear FY 2014. To date, approximately $3.3M has been spent to purchase new generators. The ANG budgeted $3.1M to overhaul generators in FY 2013 and submitted a budget adjustment of $1.7M for FY 2014 to ensure generators were overhauled and returned to service as soon as possible. As of FY 2015, there are still 57 outstanding requirements to be filled.

C-17 and KC-135 Maintenance Inspection Stands: The ANG lacks the necessary C-17 maintenance inspection stands to perform required inspections and maintenance. The ANG's KC-135 inspections stands have been fully utilized for many years, and have been subjected to frequent shipments and transfers between units. Most no longer meet AFOSH or OSHA standards as these aging stands, some over four decades old, require frequent maintenance. Maintenance organizations mitigate the use of this equipment through modifications in an attempt to refit the stands. These efforts, however, are not consistent in their efficacy or long-term safety and simply delay the inevitable. Consequently, the ANG would like to purchase five new C-17 stands and 21 new KC-135 stands at $80M to alleviate unnecessary risk and allow maintainers to focus on aircraft specific tasks.

Maintenance Special Support Vehicles: As previously mentioned, current maintenance operations depend on equipment from the 1970s and 1980s such as the vehicles used in the towing of aircraft. As part of the National Defense Authorization Act for FY 2015, the House Committee on Armed Services expressed congressional support for fully evaluating battery towbar-less tow vehicles. The ANG is leading this effort and is in the process of procuring of an alternative-fuel tow vehicle that will provide improved maneuverability and visibility during towing operations, resulting in better utilization of hangar space as well as improved sheltering of aging aircraft. This vehicle also requires less training to use, positions aircraft more quickly, is more compact and reduces the environmental impact through reduced emissions.

e. Modernization Programs and Shortfalls

The annual Air Reserve Component Weapons and Tactics (WEPTAC) and ANG Domestic Capability Priorities (DCP) conferences remain the primary clearinghouses for ANG modernization efforts. At WEPTAC, field operations, maintenance and support experts ANG-wide identify and vet critical shortfalls collaboratively with headquarters staff-level functional area managers. The process includes command and control (C2), cyber, ISR, training, and simulator systems as well as weapons delivery, airlift, and tanker platforms. These capability shortfalls are documented in the annual *Weapons Systems Modernization Priorities* book. For FY 2015, this process documented a $10.7B shortfall for modernization and recapitalization of the ANG aircraft fleet and associated equipment.

The second main conference, DCP, targets domestic operations capabilities as its name suggests. Its intent is to identify and prioritize capability shortfalls for Federal and non-federal support to civil authorities during a domestic emergency. The conference is organized by functional areas to mirror the Federal Emergency Management Agency's Emergency Support Function (ESF) framework and aligns requirements with the Chief, National Guard Bureau's "Essential 10" core capabilities. The output from this conference is published in the annual ANG Domestic Capability Priorities Book.

A-10: In 2014, the ANG began upgrading the A-10 with a parking brake. The addition of a parking brake allows refueling in austere locations without requiring ground personnel to place and remove chocks. The Improved Data Modem was upgraded with version 6 firmware, which was paid for with NGREA funding. Version 6 firmware will facilitate communications between the A-10's avionics. NGREA funding will also support the installation of a helmet-mounted integrated targeting (HMIT) system to simplify target acquisition and increase pilot situational awareness, the Lightweight Airborne Radio System version 12 (LARS v12) to dramatically

decrease location times of downed airmen during combat search and rescue missions, and the Selective Availability Anti-Spoofing Module (SASSM) Embedded Global Positioning System (GPS)/Inertial Navigation System (EGI), which will improve navigational accuracy in a GPS-denied environment. Air Combat Command (ACC) approved these modernization efforts, which conclude in FY 2017.

Battle Control Center (BCC): The BCCs continue to integrate advanced sensors into existing radar architectures. Advanced sensor capability will enhance the BCC's ability to work collaboratively with Aerospace Control Alert (ACA) fighter aircraft and Ground Based Air Defense units. However, advanced data link capabilities are also required to deliver precision J-series messages at a rate required to perform Integrated Fire Control (IFC). Both the Battle Control System-Fixed and the associated Pocket J North American Aerospace Defense Tactical Data Link (TDL) architecture must be upgraded to support IFC. Along with advanced sensor integration, interagency and joint collaboration are critical to performing the Homeland Defense mission. Currently, the BCCs lack the ability to share information across different classification levels. A Cross Domain Enterprise Service would allow BCCs to integrate tactical data links, provide functional redundancy to the Air Event Information Sharing Service, integrate joint service tactical data links and facilitate defense support of civil authorities (DSCA) through the Situational Awareness Geospatial Enterprise application. Aging radio infrastructures with limited beyond line-of-sight (BLOS) capability are also a concern for BCC. Each BCC has unique geographic and infrastructure challenges that require a flexible, yet comprehensive approach to mitigate current gaps. Finally, BCC Live Virtual Constructive/Distributed Mission Operations (LVC/DMO) capability continues to be limited. Past NGREA funding provided limited offline capability to connect to classified networks on a part-task basis, and current initiatives will also provide some advanced program access on a part-task basis for weapons controllers. Currently, the capability to perform crew-level LVC/DMO missions does not exist at any of the BCCs.

Battlefield Airmen (BA): The BA weapon system is comprised of Combat Controller Teams (CCT), Guardian Angels (GA), Special Operations Weather Teams, and Tactical Air Control Parties (TACP). The ANG continues to pursue effective solutions to meet critical combat capability gaps in those areas. The top priority is the BA interoperable communications program, which provides BA with both enhanced situational awareness and communication capabilities. Previous NGREA funding has delivered critical battlefield equipment to the 14 TACP, 2 CCT, and 3 GA squadrons. ANG BA require continued advancements with coded spot trackers, short-wave infrared devices, mission recording equipment, and tactical vehicles to remain viable and relevant as a Total Force partner. Optimal employment capability requires BA forces to have wireless solutions, improved night vision devices, advanced tactical headsets, and less-than-lethal weapons. The mission of GAs is not solely special operations; they contribute to daily rescue missions from home station and require domestic or dual-use equipment.

C-130H: Legacy C-130H aircraft safety and compliance requirements are being addressed via Avionics Modernization Program (AMP) Increments 1 and 2. This includes Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) as well as Automatic Dependent Surveillance-Broadcast (ADS-B) to ensure global airspace access. The fleet is also exploring performance and fuel savings initiatives with a 3.5 engine upgrade proposal, while upgrading propeller performance by upgrading to an eight-bladed propeller (NP-2000). Additionally, the Single Pass Precision Airdrop (SPPAD) program has begun operational testing

with the addition of a LITENING Pod to increase the accuracy and delivery of personnel and equipment. Improvements to the Real-Time Information in the Cockpit Program (RTIC) are being integrated to increase data link and self-protection capabilities, which enhance operations in hostile environments.

C-130J: The ANG is integrating Block 30 Large Aircraft Infrared Countermeasures (LAIRCM) on the C-130J. This capability is identified as a high priority mission critical capability. The C-130J also has identified SPPAD as a critical capability. The SPPAD assessment from C-130H testing and fielding will be utilized for similar upgrades to the C-130J to increase the accuracy and delivery of personnel and equipment during airdrop operations. Upgrades to the RTIC system will include upgraded hardware/software to provide an airborne Dynamic Retasking Capability and an integrated processor that will improve operational effectiveness.

C-17: Extended range fuel tanks continue to be the most critical shortfall for ANG C-17s. The extended range fuel tanks are capable of carrying an additional 65,000 pounds of fuel and extend the range of the C-17 by 1,800 nautical miles. The extended range afforded by these tanks enables execution of long-distance, time-critical missions (e.g., military support, aeromedical evacuation, humanitarian relief operations, etc.) without a reliance on tanker aircraft. Additionally, it reduces the reliance on aerial refueling, decreases takeoff and landing cycles, and reduces overall wear and tear on the weapons system. C-17 operators, along with other mobility air forces operators, have identified the need for better, more reliable, means of communication between aircrew and command and control entities. These improvements include: integrated data link, upgraded satellite communications, and an electronic flight bag. To increase operational effectiveness in a hostile environment the C-17 community has identified Block 30 LAIRCM as the most effective measure against man-portable air defense systems.

C-21: The ANG C-21 community identified an avionics upgrade as a mission essential requirement. An improved avionics suite will increase reliability and keep the fleet operationally viable.

C-32B: Critical C-32 capability shortfalls have been met in FY 2013 and FY 2014 using a combination of Air Force Special Operations Command (AFSOC) procurement and NGREA funds. Current upgrade requirements call for aircraft winglets to provide increased aircraft performance.

C-40: To enhance C-40 employment during worldwide operations, an electronic flight bag has been identified as a mission essential capability. The C-40 routinely operates in third world countries where access to critical flight publications is not always available. An electronic flight bag, coupled with an already integrated high-speed data internet capability, provides instant access to all required flight publications. An electronic flight bag eliminates the need for bulky and expensive paper flight publications.

Component Numbered Air Force (C-NAF) in support of Active Duty Air Operations Centers (AOC): In the past two years the ANG Air Operations Groups (AOGs) have been successfully upgraded to the Recurring Event (RE)-11 and in some units RE-12 has also been rolled-out successfully. Funding is expected to finalize installations of RE-12 and RE-13 for all the AOG sites. The RE-13 upgrades are scheduled to occur during FY 2017 and FY 2018 and are

scheduled to be the last upgrades to AOC 10.1. Concurrent applications in RE-13 will also lay the framework for the roll-out of AOC 10.2 to the AOGs in FY 2020 through FY 2022. Further discussions on AOC 10.2 roll-out priorities to include accelerating the ANG installations are ongoing. In addition, the ANG funded Joint Range Extensions (JRE) units for all ANG AOGs, which were delivered in FY 2015 and installed. To exploit the advantages provided by the JREs, the AOGs will still require a scaled Core Radio Package (CRP) solution for each of the ANG AOG sites. The CRP consists of multiple radios, antennas, and data-link functionality that are necessary for the operation of the JRE, and will provide continuity of AOG training. Failure to upgrade all ANG sites will adversely affect the AOG's ability to maintain mission-capable personnel due to incompatibility of C2 mission applications and data interoperability between the AOGs and their assigned AOC locations. All of the proposed upgrades, RE-12, RE-13, and CRP are critical components that will facilitate the AOGs in using DMO to support their assigned geographic AOCs and enhance process integration within the AOC mission.

Control and Reporting Center (CRC)/Air Control Squadron: The CRC capabilities are adapting to meet future C2 requirements while sustaining relevant systems through several sustainment and modernization efforts within this mission design series. Significant realignment of mission capabilities is projected to streamline battle management internal to C2 mission assets. Continued mission-requirement transformation outpaces planned upgrades to mission capabilities and service life extension programs (SLEP) leading to numerous shortfalls. Funding is needed to provide a permanent solution to the bed-down of the planned Operations Module (OM) modernized system at all units, address shortfalls in housing and protection of tactical communication equipment in adverse environmental conditions, fulfill live mission training requirements, and enable an effective approach to support airframe and ground mission crew training scenarios. Previous NGREA support ($2.1M) finalized the CRC Power Distribution Panel system, which satisfies the DOD goals for deployable operational energy conservation plans and distribution. NGREA funds ($176K) were also used to field The Integrated Digital Mission Recording and Playback system for the OMs. This represents a major mission reconstruction capability allowing mission playback to mitigate current degradation in debriefing, safety, and training. ACC's efforts to maintain the AN/TPS-75 and replace it with the Three-Dimensional Expeditionary Long-Range Radar will assure these systems meet current and projected mission requirements. The AN/TYQ-23 SLEP and modernization ($40M and $74M) efforts address critical mission shortfalls and urgent requirements identified in recent evaluations. These efforts will ensure the CRC can meet any tasking requiring battle management/C2 capabilities.

Cyber Warfare (CW) and Information Operations: Over the past three fiscal years, the ANG has used NGREA funds to equip and modernize three of the ANG CW units in Kansas and Maryland with a baseline Cyberspace and Critical Infrastructure Range. The ANG continues to improve its cyber capabilities by equipping cyber units with the training equipment necessary to perform the mission. The Garrison Interceptor Platform and the Virtual Interconnected Training Environment will permit our cyber personnel to train to defend critical infrastructure.

Distributed Common Ground System (DCGS): The third and final installation of Air Force (AF) DCGS high-altitude equipment will be completed in the fall of 2015 at Otis Air National Guard Base, Massachusetts. Installation of equipment has been pushed back multiple times, mainly due to facility issues that are nearing resolution. Programmatic delays in fielding

upgrades to both the signals intelligence and geospatial intelligence components of the AF DCGS baseline have also contributed to the delay. The ANG supports 25th Air Force's efforts, with the Air Force Research Laboratory, in creating a DCGS Weapon System Trainer, which remains a high priority for the ANG.

E-8C Joint Surveillance Target Attack Radar System (JSTARS): The ANG fully supports ACC in pursuing the recapitalization of JSTARS. To address operational requirements for current operations, the ANG continues to fund modernization of the current E-8C JSTARS platform with NGREA funds. NGREA funding is delivering a Global Imagery Server, which provides imagery products in standard/native data formats, and is capable of storing and serving worldwide imagery data, which is layered with multiple geospatial data sources to support JSTARS battle management and surveillance. NGREA was also used to fund the maritime integrated automatic identification system, which identifies and locates vessels by electronically exchanging data with other nearby ships and vessel tracking services stations, greatly enhancing JSTARS's ability to distinguish between neutral and suspect maritime entities. Current plans will use NGREA to upgrade the E-8C Weapon System Trainer, which will improve pilot simulator training in, among other things, air-to-air refueling. ACC approved these modernization efforts, which conclude in FY 2017. To extend the E-8C's service life, the Air Force is procuring and installing the kits for an upgrade of the primary mission equipment to resolve issues caused by diminished manufacturing.

EC-130J: The ANG continues to work with AFSOC to identify and field capability requirements. To bridge the gap in available capability while awaiting a long-term solution from AFSOC, the ANG completed funding for the enhanced situational awareness suite upgrade with NGREA. The Special Operations Forces Air Mission Suite Enhanced Situational Awareness is the AFSOC solution to meet the enhanced situational awareness requirement. This strategy permits warfighters to increase their capabilities years before other funding strategies mature. The capability required for optimum employment of the EC-130J relies greatly on the continued production of a Special Airborne Mission Installation and Response/Fly-Away Broadcast System solution, which allows all EC-130J aircraft to support military, psychological operations.

Engineering: Firefighting, search and rescue, explosive ordnance disposal (EOD) equipment, water production kits, and prime power equipment shortages continue to inhibit the ANG's ability to perform home station and overseas deployments, or provide support to civil authorities. Furthermore, the FY 2017 TFC implementation plan identifies the need for additional ANG prime power at nine different locations. The equipment will be capable of increasing and maintaining emergency power for an extended period to a hospital center, shelter, or other facility deemed critical to a community. These teams and equipment could power entire facilities or areas of the community. Moreover, the prime power makes possible the "open the base" capability, either expeditionary or contingency, for the ANG. Currently, insufficient capacity exists in the Federal Emergency Management Agency regions.

The National Guard Bureau is examining pre/post-disaster joint potable water production capability with the Army. Initial estimate for this capability at ten locations is $5M.

There is a continued need for explosive detection devices and personal protective equipment for EOD. To combat this shortfall, the ANG, through NGREA funding, has procured 17 state-of-the-

art, bomb-squad, emergency-response vehicles, and 17 total containment vessels, which are designed for the safe containment and removal of suspect objects containing explosives, hazardous toxic substances, and radioactive materials. These capabilities when used in conjunction with remote-controlled robot systems provide increased safety and survivability to ANG EOD personnel and the local community.

Expeditionary Air Traffic Control, Deployable Radar Approach Control (D-RAPCON): The 1950s analog-based AN/MPN-14K is still the primary ANG deployable Air Traffic Control system. It has received only minor radar upgrades since the 1980s. Sustainment of legacy systems such as the AN/MPN-14K is increasingly difficult, as many of the subsystems are no longer commercially available or produced. The ANG will replace these legacy systems with a total of 10 digital D-RAPCON systems, scheduled to reach initial operational capability in FY 2018 and full operational capability in FY 2022. These new systems will include the new Deployable Instrument Landing System as an AN/MPN-14K Precision Approach Radar component replacement.

F-15C: Active Electronically Scanned Array (AESA) radar remains the first priority for modernizing the F-15C and is the same radar installed on AC F-15Cs. To date, Congressional appropriations have funded the majority of AESA radars for the ANG. The ANG F-15C units also operate the only combat-coded legacy radar systems in the combat air forces (CAF) and must convert these older radars to AESA. The second highest modernization priority is an out-of-band solution to allow the F-15C to detect targets in highly-contested electromagnetic environments. Over the past few years, the Air Force has provided funding for digital video recorders, an upgraded central computer and software program, and limited aircraft rewiring. The ANG used NGREA funding for its F-15C aircraft to integrate the Advanced Targeting Pod and a new cockpit display enabling visual identification of targets of interest on night ACA missions. Additionally, NGREA funds will be used to procure and install the hardware required to carry the critically important back-of-launcher (BOL) external countermeasures system, dramatically improving ANG F-15C survivability against widely-proliferated advanced threats. NGREA funded the acquisition of equipment to complete the installation of the joint helmet-mounted cueing system (JHMCS) and night cockpit lighting modifications for all ANG F-15Cs not funded by the Air Force. It also purchased additional JHMCS pilot equipment and provided simulator upgrades for the ANG-operated F-15C flying training unit. These simulators support JHMCS and night-vision-goggle training for all F-15C pilots. In response to a United States Northern Command (USNORTHCOM) urgent operational need for BLOS communication capability for alert aircraft, the ANG worked with the system program office to field an initial, standalone satellite communications (SATCOM) capability with NGREA funding. Future capability to increase persistence and reduce workload on an already strained tanker fleet includes the addition of Conformal Fuel Tanks (CFTs). This ANG effort will integrate CFTs and demonstrate an operational utility for future budgeting efforts. This CFT effort directly supports the USNORTHCOM mission of providing homeland defense by increasing fighter range and on-station time.

The Air Force stopped sustainment of the Tactical Electronic Warfare System in FY 2013, before the replacement, Eagle Passive Active Warning and Survivability System (EPAWSS), was operational. The F-15E is the lead for EPAWSS, followed by the F-15C, but neither aircraft will receive EPAWSS for several years, because it is still in development. Consequently, ANG

F-15C aircraft will have a significant gap in electronic warfare capability for up to 10 years as they await the EPAWSS upgrade. Further, because ANG F-15C aircraft are more than 20 years old, cockpit displays are inadequate from both an operational and maintenance perspective. NGREA funding will be used to upgrade cockpit displays to provide improved capability to present vital targeting information, reduce task loading, and improve pilot situational awareness.

F-16: The highest priority upgrade for the F-16 fleet continues to be sustainment and replacement of the aging radar system. The aging, mechanically-scanned radar continues to require significant sustainment, and is ineffective in all but the most permissive of operational environments. While ANG continues to look at a means of replacing the most failure-prone components of the radar system with upgraded, digital components, the Air Force is working with the Office of the Secretary of Defense (OSD) to field AESA on F-16s tasked with the ACA mission. The requirement to field AESA on ACA-tasked F-16s stems from an OSD-validated Joint Urgent Operational Need from USNORTHCOM. Upon fielding of this requirement, a determination will be made at the OSD level as to whether AESA should proliferate to a portion or all of the remaining F-16 fleet. NGREA is funding installation of secure line-of-sight (SLOS) and BLOS communications suites; higher data rate processors for vital systems upgrades; high-resolution Center Display Units; HMIT system; enhanced self-protection suites; and the advanced identification, friend or foe (AIFF) combined interrogator transponder, a system acknowledged by USNORTHCOM as a critical requirement for homeland defense. In past years, ANG NGREA funding has supported Block 30 HMIT, Center Display Units, ALQ-213 processor upgrades, and Ethernet, X-mux, and the Commercial Fire Control Computer, which increases avionics processing power and bandwidth to enable carriage of advanced weapons, such as the small diameter bomb. The Air Force has, thus far, funded updates to the Operational Flight Program software required to support all of these systems, but all modification hardware and installs have been NGREA funded. Other NGREA funded acquisitions include Block 42 ALQ-213, AIFF, and Block 40/50 JHMCS. The lack of funding for Block 40 AIFF in the AF budget will create a capability shortfall as the aircraft move to the ANG from the other components. Additionally, the radar warning receiver system (ALR-69) on pre-Block (25/30/32) and Block 42 F-16s is nearing obsolescence, and the replacement system (ALR-69A) is unfunded. The ANG is pursuing ALR-69A as a modernization effort using congressionally appropriated funding, but only on aircraft equipped with the AESA radar system. To counter the proliferation of infrared-guided, man-portable, shoulder-launched surface-to-air missiles, the ANG is investigating procurement of an off-the-shelf pylon-mounted missile warning system for the ANG F-16 fleet. The ANG procured a second ARC-210 radio for pre-block F-16s to enable simultaneous SLOS and BLOS operations, and future capability includes a three-dimensional audio system to reduce pilot workload by synchronizing and spatially separating multiple radios. The ANG is funding an integration effort to allow the use of the AN/ASQ-236 Synthetic Aperture Radar pod. This effort will allow the self-generation of high quality targeting coordinates in all weather, day and night.

HC/MC-130: This mainstay weapons system underwent several recent upgrades to include the installation of a communication suite, Directional Finding capability, 8.33 kHz radio separation, Blue Force Tracker 2, Full Motion Video, an external arm to mount sensors, aircrew flight equipment storage racks, and crashworthy seats for loadmasters. In recent years, ANG, AFR, and ACC collaboratively upgraded the package. Further, ANG aircraft integrated heavy equipment airdrop capabilities into the cargo compartment for dismounting of para-rescue personnel.

Despite these modifications, ANG HC/MC-130s require communication and data-link program suites, electro-optical/infrared (EO/IR) sensor improvements, increased engine performance, and CNS/ATM avionics upgrades to maintain worldwide flight capability and meet operational requirements. These investments will enhance the combat search and rescue and personnel recovery task force's effectiveness greatly.

HH-60G: Direct communication with civilian emergency responders will be achieved through a NGREA funded program to modernize the ANG HH-60G fleet's communication set. Teaming with the AFR, the ANG is replacing single-band SATCOM, very high frequency (VHF)/frequency modulation (FM), VHF/amplitude modulation (AM), and ultrahigh frequency (UHF)/AM radios with four ARC-210 multi-band radios. This year ACC chose to utilize the ANG Smart, Multi-Function Color Display (SMFCD) solution as the permanent solution for the HH-60G. The ANG will lead the fielding of the SMFCD for the HH-60G fleet. ANG and AFR will also begin to test and field the Blue Force Tracker 2 system to build the crews and command and control situational awareness. A Full Motion Video capability will be added to the aircraft with the procurement of Rover 6 for the HH-60. To remain ready and relevant to perform missions, the minimum upgraded capabilities essential to the HH-60G include upgraded communication, an SMFCD solution with data link, and improved defensive capabilities with hostile fire indicators. For optimum employment of these capabilities a helmet-mounted cueing system with point designation and full motion video is necessary. An approved and funded initiative to replace HH-60s lost in combat will return the number of AF aircraft to 112 by FY 2017. By congressional mandate, the ANG will receive no less than four of these aircraft. A recapitalization effort is also necessary, given the age of the fleet and a resultant increase in component failures causing increased maintenance cancellation rates. As currently planned, the Combat Rescue Helicopter program of record will fully recapitalize the HH-60 fleet.

KC-135: The KC-135 continues to be deployed to high-threat areas of operation. To safeguard against man-portable air defense systems, the ANG is leading the integration of the Block 30 LAIRCM system. Block 30 LAIRCM paves the way for the integration of an infrared camera that can track multiple aircraft and provide instant situation awareness for large aerial refueling formations. Within the past year the RTIC was operationally assessed on the KC-135. The RTIC provides a baseline for future growth to establish the KC-135 as a data relay platform when equipped with Link 16 and Tactical Data Link hardware and software. To reduce the risk of midair collisions, new external overt and covert lighting will be installed on the KC-135. The KC-135 operates in all temperature extremes. Currently, there is no internal ground cooling capability on the aircraft. In some instances, flight deck temperatures can reach up to 160 degrees Fahrenheit. The KC-135 ground cooling capability has been identified as a critical requirement. For future operations in contested GPS environments, a jam-resistant GPS will be essential to successful operations. Jam-resistant GPS is also a critical capability for the KC-135. With sufficient funding the ANG will continue to pursue the above system upgrades to ensure future operational mission success.

LC-130: The modernization of the LC-130 aircraft continues throughout 2015. All 10 of the LC-130s now have the Electronic Propeller Control System installed. The NP2000 program to replace the 4-bladed propellers with the 8-bladed variant is progressing, and a contract was awarded in 2015 to retrofit the fleet. This program is fully funded, and the ANG plans to procure additional propeller upgrades for other C-130 variants to utilize the benefits of significantly

increased reliability and performance. The LC-130 will also be the first aircraft to receive the T56 3.5 engine upgrade. The Engine Program Office at Tinker Air Force Base is spearheading the effort with contract award planned in FY 2016 and the first LC-130 fleet upgrade installation beginning in FY 2017. The Special Airborne Mission Installation and Response (SABIR) articulating arm is operational on the LC-130 as a temporary modification, and ANG continues to work with the C-130 Program Office to make it a permanent roll-on/roll-off capability. The LC-130 Crevasse Detection Radar, which enables the pilot to identify and avoid crevasses in deep ice-field locations, is operational, but updates to the radar continue to improve its usefulness. The ANG is also working closely with the National Science Foundation to streamline the process that enables the science community to use the LC-130 for research purposes. Use of innovative equipment that has minimal impact on the structure of the aircraft speeds the approval process and significantly reduces engineering efforts. Finally, as a special mission aircraft, the cost to replace these aircraft is prohibitive under current fiscal constraints, and the ANG must plan to continue to operate this National Interest/Security Platform well beyond 2030. The LC-130 requires a major modification to ensure operational viability well into the future due to continued delays in modernization and recapitalization. There are many commercially available systems that will meet LC-130 current and future avionics requirements. By streamlining the acquisition process, the avionics installations can be completed in time to meet the rapidly approaching 2020 ADS-B Out airspace mandates.

Live, Virtual, Constructive (LVC) Simulation and Range Instrumentation: The LVC is the overarching training technology that encompasses all aspects of simulation, including DMO and range instrumentation, into a virtual battlespace environment. The ability to connect simulators for mission rehearsal events and exercises adds a significant and required level of realism and effectiveness to simulator training. The ANG both procures simulators through USAF programs and designs and builds simulators in-house. Fielded ANG simulator programs include: 17 KC-135 Boom Operator Simulation Systems, 17 ANG Advanced Joint Terminal Attack Controller Simulation Systems, 8 C-130H Multi-Mission Crew Trainers (MMCT), 1 HH-60G MMCT (supports formal training), RC-26 Mission Sensor Operator simulator, and technology and obsolescence upgrades for the F-15 and F-16 unit simulators. In addition, LVC capabilities are in development for ISR and C2 units to include ANG C-NAF Augmentation Units, 601st AOC, air defense sectors, DCGS, and remotely piloted aircraft (RPA). Current LVC upgrades at the ANG's 14 air-to-ground ranges include high and medium fidelity surrogate target systems and advanced laser scoring systems. Due to Air Mobility Command's lack of available procurement funds for ANG simulators, the ANG purchased a high-fidelity C/EC/HC-130J Reconfigurable Weapons System Trainer to support C/EC/HC-130J training.

Medical: The ANG has used NGREA funding to modernize its Expeditionary Medical Support (EMEDS) assemblages. Upgrades include deployable oxygen systems, tents, and other medical equipment. ACC Manpower and Equipment Force Packaging teams are modernizing the EMEDS sets' equipment authorizations, tailoring assets to rapidly deploy for a Federal mission or a domestic response. Upgrading ANG EMEDS with new equipment prevents misalignment of resources with the AC and enables the medical units to continue providing modern lifesaving, patient care, and treatment tools for medical first responders and the patients in their care.

The ANG is reviewing the outdated medical equipment in the original 17 Chemical, Biological, Radiological, Nuclear, and High-yield Explosives (CBRNE) Enhanced Response Force Package

(CERFP) units to determine if they are still suitable substitutes to more modern equipment in the Joint Mission Essential Equipment List. Some of the lifesaving equipment is no longer supported by the manufacturers and needs to be modernized.

The 27 CERFP/Homeland Response Force teams are often geographically separated from the mass casualty event and unable to provide the level of care needed in the initial hours of the event. None of the 89 medical groups have organic first responder patient treatment equipment. Medical personnel need a general purpose first responder kit to render first aid in mass casualty environments. This capability is critical for triage, stabilization, and transportation of victims to a higher level of care. The kit needs to be light weight, easily stored, and configured modularly to enable a team of responders to access pouches so that mobility of efforts can be accomplished.

The En-Route Patient Staging System (ERPSS), utilized by ANG units during domestic response aeromedical evacuation missions, does not have environmental control capability and North Atlantic Treaty Organization gurneys to move patients. This exposes patients (many of who will be civilians with multiple medical issues) to prolonged high heat or in some cases, extreme cold, exacerbating their medical conditions potentially causing rapid decompensation. Secondly, large numbers of bariatric patients (individuals dealing with extreme obesity) have presented to ERPSS units during domestic operations; ERPSS units are not equipped to move these patients to aircraft or keep them off the ground while providing care.

Air National Guard domestic responses routinely include long-term patient care by GA personnel on HC-130s, HH-60s, and numerous other platforms. Improving this long-term lifesaving/sustaining care by modernizing and incorporating new equipment into the GA medical equipment kit is necessary. The legacy defibrillator currently used is too heavy, too large, has limited battery operating time, and lacks critical care capabilities. Providing this capability will permit on-scene C2 and Wing C2 to track mission progress, ensuring adequate resources are provided at the correct time improving patient care. New transport mechanical ventilators have been developed that provide safe and effective ventilation during pre-hospital extended transport, common for GA missions. Mechanical ventilation is the standard of care in current medical protocols. However, these new automated mechanical ventilators control many critical ventilation variables allowing safe and reliable patient ventilation, preventing the medic from hyperventilating a patient. The use of these modern ventilators during GA missions frees up the medic from supporting manual mechanical ventilation, allowing the medic to perform other critical lifesaving patient care procedures.

MQ-1/MQ-9: The ANG has 12 RPA units and one Classic Association unit. Of the 12 units, nine are in conversion to the MQ-9. At this time eight units lack a certified on-site Mission Simulator/Trainer. Additionally, as there is no established Continuation Training or Flying Hour Program for the RPA units in the continental United States, an additional Mission Simulator/Trainer is required at each ANG RPA Mission Control Element location. The RPA ground control station (GCS) was rapidly fielded from a proof of concept demonstration. The ANG plans to modernize the RPA GCS to improve the human-machine interface, enhance system performance, and meet increasing mission requirements. The squadron operations centers (SOCs) are the crucial tactical C2 link between individual unit RPAs and deployed locations. They provide the common operating picture between the two, and the supported intelligence units. Upgrading the SOCs is critical for the MQ-1 and MQ-9. They require multilevel secure

communication suites; independent and redundant data architectures to improve mission reliability; rapid exploitation of support data; and rapid data file transfer and sharing.

The ANG continues to work with the Air Force operations and Army test communities to meet Federal Aviation Administration (FAA)-imposed sense-and-avoid requirements for RPA operations in the national airspace system (NAS). This research and development effort will culminate in the fielding of a transportable ground-based sense-and-avoid system for both Army and Air Force RPA training and civil support missions in the NAS. While primarily designed for homeland training and operations, it will also provide significant deployable combat capability to combatant commanders. Additional capability gaps have been identified for a deployable/mobile Launch and Recovery Element kit that includes a containerized GCS, as well the need for an onboard data link for increased situational awareness and transfer of targeting information

RC-26B: Six Block 25 aircraft are under contract to be modified to the Block 25R configuration with new Mission Management Software, an upgraded communication suite to include integrated civil support/law enforcement radio capability, a new modern EO/IR turret, and BLOS data capability. These efforts were initially funded using FY 2013 NGREA funds with additional FY 2014 funds allocated to upgrade the five Block 20 aircraft to the same configuration in 2016, making the Block 25R the fleet baseline. Recently, FY 2015 funds were allocated to modernize the avionics of the fleet and will incorporate global CNS/ATM compliance. Future plans include a performance upgrade to include new engines, new generators, news props, and a drag reduction to allow the carriage of additional equipment for increased capabilities both onboard and in an external pod.

Security Forces (SF): The ANG is actively filling SF equipment shortfalls utilizing NGREA funds. SFs face an extremely high operations tempo with air expeditionary force deployments and missions in support of civil authorities. The ANG is funding active shooter response platforms, target acquisition, and night observation equipment. The completion of the less-than-lethal force kit procurement has positioned SF to meet both state and combatant commander requirements when called into service. Recent and past active shooter events have highlighted the need for an enhanced response capability.

Additionally, the ANG's shortage of available ranges to conduct small arms qualification training degrades operational readiness for SF specifically, and for all ANG personnel preparing for deployment.

B. Changes since the Last NGRER

The continued budgetary restrictions and resultant cuts in defense spending present fundamental challenges to the sustainment, modernization, and recapitalization of the ANG's legacy equipment. The Air Force has been forced to make difficult choices to meet operational requirements while under significant fiscal restraints. Accordingly, the Air Force has chosen to invest heavily in fleet recapitalization and compliance initiatives, leaving some fleet modernization initiatives "below the line." The ANG continues to work within Air Force and DOD requirements development, acquisitions and test processes to ensure that ANG's fleet of aircraft are safe, modern and integrated. The 2005 Defense Closure and Realignment Commission Final and Approved Recommendations affected 62 percent of ANG units and continues to impact the ANG's readiness and operational capability. Furthermore, the Air Force

and gaining Major Commands are not always able to equip ANG units for their new missions at the same pace as the AC due to persistent budgetary constraints.

Also provided below is a list of significant changes since the publication of the FY 2016 NGRER:

- 40 Joint Incident Site Communications Capability (JISCC) Block 3 systems were modernized, and vehicles for road mobility were funded in FY 2015 and FY 2016
- ANG acquired all less-than-lethal force kits for Security Forces, which were used during the 2015 City of Baltimore protests to support local law enforcement
- C-38 Courier no longer in ANG inventory
- C-5A Galaxy no longer in ANG inventory
- Gaining two C-26A Metroliners that were returned to the United States by the Mexican government.

C. Future Years Program (FY 2017–FY 2019)

1. FY 2019 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2017–FY 2019 major equipment inventories and requirements.

2. Anticipated New Equipment Procurements

Table 3 Service Procurement Program – Reserve (P-1R) lists planned procurements for the ANG from the FY 2017 President's Budget request. *Table 4 NGREA Procurements* provides ANG planned NGREA procurements for FY 2014–FY 2016.

3. Anticipated Transfers from AC to ANG

Table 5 Projected Equipment Transfer/Withdrawal Quantities lists planned ANG transfers for FY 2017–FY 2019.

4. Anticipated Withdrawals from ANG Inventory

Table 5 also lists planned ANG major equipment withdrawals for FY 2017–FY 2019, including the force structure changes discussed in Section II, paragraph B of this chapter.

5. Equipment Shortages and Modernization Shortfalls at the End of FY 2019

For the past three years, the ANG has focused on the modernization, upgrading, and procurement of communications and firefighting equipment for both combat and civil support operations. ANG communications efforts leverage existing networks and data links to provide vital information and tactical data directly to aircraft cockpits and BA, improve ACA airspace awareness, provide state Joint Force Headquarters a common operational picture, and provide a communications bridge between military and civil responders. In firefighting, ANG utilized an

improved MAFFS-2 system that was employed as recently as August 2015[3] for wildfires occurring across the Nation. This year, ANG purchased critically needed firefighting vehicles, protective equipment, and rescue equipment, continued to recapitalize outdated vehicles, and further enhanced rescue mission capabilities.

Table 1 Consolidated Major Item Inventory and Requirements and *Table 8 Significant Major Item Shortages* provide ANG equipment inventories, shortfalls, and modernization requirements.

D. Summary

The FY 2014 National Commission on the Structure of the Air Force provided two core recommendations, both endorsed by Air Force leadership: (1) the Air Force should field new equipment across the Active and Reserve Components in a proportional and concurrent manner, and (2) the Air Force should plan, program, and budget for increased reliance on the Reserve Components. The ANG contributes nearly a third of the fighter, airlift, and air refueling capability of the Air Force. Focused and judicious use of NGREA funds over the past several years, supplementing corporate Air Force funds, has provided ANG and Air Force planners significantly improved capabilities that contribute to both the Federal and state mission responsibilities. The ANG leadership continues to focus on the need to modernize the AF's oldest aircraft and to bolster capabilities that can be used both at home and abroad. Numerous unit mission changes, increased classic associations, and the corresponding reduction in equipment authorizations dilute ANG infrastructure and expertise. ANG leadership is committed to addressing these challenges by investing in those equipment modernization efforts and new innovations that provide the best value to the Total Force.

[3] *DoD, National Guard Help Fight Western Wildfires*, DoD News, Defense Media Activity, August 17, 2015, http://www.defense.gov/News-Article-View/Article/613809/dod-national-guard-help-fight-western-wildfires.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Air Refueling							
Air Refueling, KC-135R	KC-135R	$53,100,000	148	148	140	140	140
Air Refueling, KC-135T	KC-135T	$53,100,000	24	24	24	24	24
Air Refueling, KC-46A	KC-46A	n/d	0	0	12	12	12
Airlift							
Airlift, C-130H	C-130H	$21,000,000	130	130	124	124	124
Airlift, C-130J	C-130J	$61,664,000	16	16	16	16	16
Airlift, C-17A	C-17A	$235,400,000	34	43	51	51	51
Airlift, LC-130H[1]	LC-130H	$21,000,000	10	10	10	10	10
Electronic Warfare (EW)							
EW, E-8C	E-8C/AOT	$221,700,000	16	16	16	16	16
EW, EC-130J	EC-130J	$50,700,000	3	3	3	3	3
Fighter							
Fighter, A-10C	A-10C	$13,000,000	64	63	63	63	63
Fighter, F-15C	F-15C	$25,400,000	127	127	127	127	127
Fighter, F-15D	F-15D	$24,400,000	10	10	10	10	10
Fighter, F-16C	F-16C	$7,000,000	311	311	313	313	313
Fighter, F-16D	F-16D	$7,200,000	45	43	43	43	43
Fighter, F-22A	F-22A	$160,100,000	20	20	20	20	20
Operational Support							
Op Support, C-21A	C-21A	$2,300,000	2	2	2	2	2
Op Support, C-32B	C-32B	$115,700,000	2	2	2	2	2
Op Support, C-40C	C-40C	$75,500,000	3	3	3	3	3
Rescue							
Rescue, HC-130N	HC-130N	$21,000,000	6	2	2	0	0
Rescue, HC-130P	HC-130P	$21,000,000	3	3	3	0	0
Rescue, HH-60G	HH-60G	$11,900,000	17	18	20	20	20
Rescue, MC-130P	MC-130P	$21,000,000	4	4	0	0	0
Rescue, HC-130J	HC-130J	$70,400,000	0	4	8	12	12
Miscellaneous Equipment							
MD-1A/B	MD-1A/B	$1,600,000	22	22	22	22	22
MQ-1B	MQ-1B	$3,100,000	35	35	0	0	0
MQ-9A	MQ-9A	$8,700,000	35	47	47	48	48

1. Four LC-130s are National Science Foundation (NSF)-owned.

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Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Equip No.	Average Age	Remarks
Air Refueling			
Air Refueling, KC-135R	KC-135R	54	
Air Refueling, KC-135T	KC-135T	56	
Airlift			
Airlift, C-130H	C-130H	27	
Airlift, C-130J	C-130J	11	
Airlift, C-17A	C-17A	16	
Airlift, LC-130H	LC-130H	30	
Electronic Warfare (EW)			
EW, E-8C	E-8C	47	
EW, EC-130J	EC-130J	15	
Fighter			
Fighter, A-10C	A-10C	35	
Fighter, F-15C	F-15C	32	
Fighter, F-15D	F-15D	33	
Fighter, F-16C	F-16C	26	
Fighter, F-16D	F-16D	27	
Fighter, F-22A	F-22A	10	
Operational Support			
Op Support, C-21A	C-21A	28	
Op Support, C-32B	C-32B	12	
Op Support, C-40C	C-40C	12	
Rescue			
Rescue, HC-130N	HC-130N	22	
Rescue, HC-130P	HC-130P	49	
Rescue, HH-60G	HH-60G	25	
Rescue, MC-130P	MC-130P	49	
Miscellaneous Equipment			
MQ-1B	MQ-1B	7	
MQ-9A	MQ-9A	4	

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Table 3

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Modification of Inservice Aircraft			
F-15	$602,000	$25,671,000	$51,552,000
F-16	12,318,000	6,336,000	2,607,000
F-22A	24,599,000	25,887,000	41,212,000
Increment 3.2b		34,660,000	
C-17A		14,994,000	4,687,000
C-130	13,404,000	40,111,000	25,773,000
C-135	18,324,000	21,909,000	21,850,000
E-8	10,900,000		
H-60	28,010,000	21,007,000	6,077,000
Aircraft Replacement Support Equipment	497,000	563,000	608,000
Vehicular Equipment			
Passenger Carrying Vehicles	220,000	224,000	227,000
Medium Tactical Vehicle	1,984,000	2,020,000	2,054,000
Items Less Than $5M (Cargo and Utility Vehicles)	282,000	287,000	290,000
Security and Tactical Vehicles			468,000
Items Less Than $5M (Materials Handling Equipment)			621,000
Runway Snow Removal and Cleaning Equipment	351,000	357,000	363,000
Items Less Than $5M (Base Maintenance Support)	2,402,000	2,410,000	2,378,000
Electronics and Telecommunications Equipment			
Air Traffic Control and Landing System	31,712,000	16,097,000	16,387,000
Weather Observation Forecast	1,372,000		
General Information Technology	4,428,000	5,160,000	4,914,000
Combat Training Ranges		12,844,000	
Air and Space Operations Center - Weapon System	600,000	600,000	600,000
Information Transport Systems	8,887,000	38,507,000	10,164,000
Tactical Communications-Electronic Equipment	10,913,000	10,787,000	10,359,000
Base Communications Infrastructure	10,781,000	10,548,000	8,940,000
Other Base Maintenance and Support Equipment			
Items Less Than $5M (Personal Safety and Rescue Equipment)	499,000	425,000	372,000
Mechanized Material Handling Equipment	2,583,000	2,467,000	2,326,000
Base Procured Equipment	970,000	911,000	852,000
Items Less Than $5M (Base Support Equipment)	1,560,000	819,000	758,000
Distributed Common Ground System (DCGS) - AF	3,803,000	3,300,000	3,366,000
Total	**$192,001,000**	**$298,901,000**	**$219,805,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Air Superiority / Global Precision Attack			
Combat Air Forces (CAF) Avionics Upgrades	$53,950,207		
CAF Combat Operations Enablers	27,905,610		
CAF Communications Suite Upgrade	7,910,772		
CAF Defensive Systems Upgrades	4,666,243		
Advanced Targeting and Radar Enhancements	23,495,841		
Rapid Global Mobility			
C-130/KC-135 Tactical Data Link and Communications Upgrade	12,778,000		
C-130H/LC-130 Enhanced Engine and Propulsion Systems	12,500,000		
C-130H/J, KC-135, EC/HC/MC-130 Defensive Systems	11,585,000		
C-130/KC-135 Interior and Exterior Night Vision Lighting	2,110,000		
LC-130 Crevice Detection Equipment	2,000,000		
C-40C Airborne Data Loader	255,000		
Simulation / Distributed Mission Operations (DMO) / Training			
Joint Terminal Air Controller (JTAC) Simulators with ARCNET Gateways	16,809,190		
C-130 Multi-Mission Crew Trainer	6,422,187		
Command and Control Training Equipment	2,331,661		
Combat Air Forces (CAF) Simulators	2,250,000		
ANG Range and Instrumentation Upgrades	1,776,329		
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade	475,221		
HH-60/RC-26 Aircrew Procedures Trainers	294,650		
Distributed Mission Operations Equipment	138,692		
Personnel Recovery / Special Operations			
HH-60G Communication, Avionics, and Defensive Upgrade	19,419,827		
Special Tactics/Guardian Angel/Joint Terminal Attack Controller Equipment	6,673,921		
EC-30, C-32 Communication, Avionics, and Defensive System Equipment	6,000,000		
HC/MC/EC-130 Communication, Avionics, Cargo Compartment, Refueling, Engine, and Defensive Upgrade	613,541		
Global Integrated ISR / Space Superiority / Cyberspace Superiority / C2 / Incident Awareness and Assessment			
E-8C Joint Surveillance Targeting Attack Radar System (JSTARS) Communication and System Upgrade	10,616,600		
Command and Control (C2) System and Communications/Link Modernization	6,306,808		
Eagle Vision Capability Upgrades	5,000,000		
Cyber Training Equipment/Cyber Operations Modernization	4,639,126		
MQ-1/MQ-9 Virtual Common Operating System Modernization	2,500,000		
MQ-1/MQ-9 Exploitation Data Upgrade	187,000		

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
Joint Incident Site Communications Capability (JISCC) and Vehicles	1,000,000		
Agile Combat Support			
Flight Line and Back Shop Advanced Logistics Equipment	19,108,147		
Security Forces Equipment	18,446,513		
Emergency Management Equipment	16,013,409		
Aircraft Support Equipment	3,231,283		
Public Health and Medical Services Equipment	4,924,600		
Fire Fighting Vehicles	664,622		
FY 2015 NGREA Equipment			
Combat Air Forces (CAF) Communications Suite Upgrade		$24,571,900	
CAF Defensive Systems Upgrades		21,760,243	
CAF Avionics Upgrades		21,375,000	
CAF Combat Operations Enablers		15,600,000	
CAF Advanced Identification Friend or Foe (AIFF), GPS, and Sensor Enhancements		9,820,400	
CAF Simulators		7,930,000	
CAF Helmet Mounted Cueing System		5,233,350	
C-130/KC-135 Tactical Data Link, Avionics, and Communications Upgrade		25,400,000	
C-130H/LC-130 Podded Sensors		16,500,000	
C-130H/J, KC-135, EC/HC/MC-130 Defensive Systems		13,000,000	
C-130H/LC-130 Enhanced Engine and Propulsion Systems		16,100,000	
C-130/KC-135 Interior/Exterior Night Vision Lighting		6,925,000	
C/EC/HC/MC-130J Simulator		20,000,000	
HC/MC/EC-130 Communication, Avionics, Cargo Compartment, Refueling, Engine, and Defensive System Upgrade		9,300,000	
EC-130 Avionics, and Defensive System Equipment		1,500,000	
C-130 Mission Crew Trainer		800,000	
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade		181,000	
RC-26B Avionics, Communications, and Sensor Upgrade		19,085,000	
Aircraft Support Equipment		17,300,000	
Special Tactics/Guardian Angel/Joint Terminal Attack Controller Equipment		16,483,521	
Command and Control (C2) Systems and Comm/Links Modernization		15,557,200	
Flight Line and Back Shop Advanced Logistics Equipment		15,530,000	
Security Forces Equipment and Vehicles		12,453,200	
HH-60G Communication, Avionics, and Defensive Upgrade		10,895,368	
HH-60/RC-26 Aircrew Procedures Trainer		1,000,000	
Logistics and Vehicle Equipment		10,329,195	
Emergency Management Equipment		9,677,857	
C-17 Extended Range Tank Install		8,504,320	
MQ-1/MQ-9 Communications and Ground Station Upgrades		8,172,400	
Advanced Targeting and Radar Enhancements		7,502,677	
Mass Care Support Equipment		7,400,000	
Space Systems and Training Equipment Upgrades		6,250,000	
MQ-1/MQ-9 Data Link, Advanced Podded Sensors and Systems		4,500,000	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
Civil Engineering Equipment Upgrades		4,430,956	
Public Health and Medical Services Equipment		4,140,140	
E-8C Joint Surveillance Targeting Attack Radar System (JSTARS) Communication and System Upgrade		4,000,000	
Joint Terminal Air Controller (JTAC) Simulators with ARCNet Gateways		3,032,000	
Distributed Mission Operations Equipment		2,350,000	
ANG Range and Instrumentation Upgrades		2,260,000	
Command and Control Training Equipment		2,026,800	
Fire Fighting Equipment and Interoperable Communications		2,004,200	
Fire Fighting Vehicles		1,205,281	
ISR and Targeting Simulation		1,318,000	
Intelligence, Information, Imagery, Analysis, and Assessment Upgrades		1,137,000	
Cyber Training Equipment/Cyber Operations Modernization		457,992	
Total	**$315,000,000**	**$415,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

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Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019 Qty	Remarks
Air Refueling					
Air Refueling, KC-135R	KC-135R		-8		
Air Refueling, KC-46A	KC-46A		+12		
Airlift					
Airlift, C-130H	C-130H		-6		
Airlift, C-17A	C-17A	+9	+8		
Fighter					
Fighter, A-10C	A-10C	-1			
Fighter, F-16C	F-16C		+2		
Fighter, F-16D	F-16D	-2			
Rescue					
Rescue, HC-130N	HC-130N	-4		-2	
Rescue, HC-130P	HC-130P			-3	
Rescue, HH-60G	HH-60G	+1	+2		
Rescue, MC-130P	MC-130P		-4		
Rescue, HC-130J	HC-130J	+4	+4	+4	
Miscellaneous Equipment					
MQ-1B	MQ-1B		-35		
MQ-9A	MQ-9A	+12		+1	

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
Air Refueling							
Air Refueling, KC-135R	KC-135R	-10	-4				
Airlift							
Airlift, C-130E	C-130E	0	-4				
Airlift, C-130H	C-130H	-21	+4				
Airlift, C-5A	C-5A	-13	-3				
Airlift, C-17A	C-17A	0	+6				
Airlift, C-27J	C-27J	-15	-6				
Fighter							
Fighter, A-10C	A-10C	-63	-7				
Fighter, F-16C	F-16C	-20	-29				
Fighter, F-16D	F-16D	-1	-1				
Fighter, F-22A	F-22A	0	+2				
Operational Support							
Op Support, C-21A	C-21A	-24	-13				
Miscellaneous equipment							
MD-1A/B	MD-1A/B	0	+1				
MQ-9A	MQ-9A	0	+1				
FY 2013 P-1R Equipment							
Modification of Inservice Aircraft							
A-10				$25,698,000	$0		
F-15				67,712,000	64,138,000		
F-16				715,000	2,572,000		
F-22A				31,714,000	37,021,000		
C-5				156,000	0		
C-17A				4,460,000	25,503,000		
C-130				7,643,000	28,064,000		
C-135				12,111,000	6,151,000		
E-8				45,027,000	17,289,000		
H-60				6,058,000	332,000		
Aircraft Replacement Support Equipment				0	7,490,000		
Vehicular Equipment							
Passenger Carrying Vehicles				214,000	0		
Medium Tactical Vehicle				1,877,000	0		
Security and Tactical Vehicles				174,000	0		
Fire Fighting/Crash Rescue Vehicles				7,067,000	0		
Runway/Snow Removal Vehicles				0	396,000		

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Electronics and Telecommunications Equipment							
Air Traffic Control & Landing System				2,111,000	780,000		
National Airspace System				2,416,000	2,420,000		
Batttle Control System				994,000	0		
Theater Air Control System Improvements				7,406,000	14,811,000		
General Information Technology				2,833,000	0		
AF Global Command & Control System				560,000	0		
Theater Battle Management C2 System				150,000	150,000		
Air & Space Operations Center - Weapon System				2,000,000	2,000		
Base Information Infrastructure				6,975,000	0		
Tactical Communications-Electronic Equipment				22,172,000	121,004,000		
Base Communications Infrastructure				6,975,000	15,037,000		
Communications & Electronics Mods				954,000	0		
Other Base Maintenance and Support Equipment							
Night Vision Goggles				1,099,000	220,000		
Mechanized Material Handling Equipment				200,000	207,000		
FY 2013 NGREA Equipment[1]							
Air Superiority/Global Precision Attack							
A-10/F-15/F-16 Helmet Mounted Cueing System						$7,689,250	$11,482,779
A-10/F-15/F-16 Communications Suite Upgrade						16,439,142	11,830,316
A-10/F-15/F-16 Avionics Upgrades						44,610,647	34,811,498
A-10/F-15/F-16 Defensive Systems Upgrades						18,821,243	9,645,564
A-10/F-15/F-16 Advanced Identification Friend or Foe (AIFF) and Sensor Enhancements						10,662,475	5,853,086
A-10 Austere Field Operations Enhancements						3,540,000	1,976,960
Advanced Targeting & Synthetic Aperture RADAR Pods						64,628,038	92,870,234
Rapid Global Mobility							
C-130/KC-135 Tactical Data Link and Communications Upgrade						4,460,000	18,781,278
LC-130 Crevice Detection Equipment						2,500,000	2,500,000
C-130H/J, KC-135, EC/HC/MC-130 Defensive Systems						41,736,000	27,987,245
C-130H/LC-130 Enhanced Engine and Propulsion Performance						12,800,000	7,421,680
C-130/KC-135 Interior/Exterior Night Vision Lighting						500,000	0
C-40C Airborne Data Loader						255,000	0
Simulation/Distributed Mission Operations (DMO) / Training							
Joint Terminal Air Controller (JTAC) Simulators with ARCNET Gateways						15,375,000	16,353,000
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade						995,000	1,435,015
F-15/F-16/A-10 Simulators						21,568,857	19,767,928
MQ-9 Reaper Mission Training Device (MTD)						336,000	0
C-130 Multi-mission Crew Trainer						1,600,000	2,669,664
ANG Range and Instrumentation Upgrades						3,255,000	3,306,000
HH-60/RC-26 Aircrew Procedures Trainers						1,300,000	2,100,000
Command and Control Training Equipment						685,000	283,300

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Personnel Recovery/Special Operations							
HH-60G Communication and Avionics Upgrade						10,789,632	10,568,876
HC/MC/EC-130 Communication, Avionics & Sensor Upgrade						23,000,000	17,796,044
HC/MC-130 Cargo Compartment Equipment						4,103,633	3,410,718
EC-130 Defensive Systems						750,000	0
Special Tactics/Guardian Angel/Joint Terminal Attack Controller Equipment						13,750,341	13,750,341
Global Integrated ISR / Space Superiority / Cyberspace Superiority / C2 / Incident Awareness and Assessment							
Cyber Training Equipment/Cyber Operations Modernization						2,070,000	84,014
Air Operations Center Capability Upgrades						6,450,000	6,450,000
Power Distribution Panel System						2,750,000	0
Eagle Vision Capability Upgrades						11,400,000	11,400,000
MQ-1/MQ-9 Data Transfer and Sharing Upgrade						479,000	10,307,381
RC-26B Avionics, Communications & Sensor Upgrade						7,728,000	14,509,351
E-8C JSTARS Communication and Avionics Upgrade						5,860,000	5,852,224
Logistics							
C-130 Support Equipment						4,000,000	4,099,846
Flight Line and Back Shop Advanced Logistics Equipment						19,257,083	18,250,121
Communications							
Joint Incident Site Communications Capability (JISCC) and Vehicles						6,250,000	2,500,000
Public Works and Engineering							
Potable Water Production						1,030,906	0
Prime Power Vehicles & Generators						1,308,056	0
Explosive Ordnance Disposal (EOD) Equipment, Vehicles & Robots						6,760,000	6,277,080
Firefighting							
Firefighting Vehicles						11,283,483	9,315,968
Firefighting Support Kits						562,563	0
Mass Care							
Disaster Relief Beddown Sets (DRBS)						8,403,158	12,438,817
Disaster Relief Mobile Kitchen Trailer (DRMKT)						4,790,771	4,834,162
Public Health							
Medical Rapid Response Equipment						175,000	120,459
Expeditionary Medical Support (EMEDS) Modernization						1,537,426	1,296,051
Security Forces							
Security Forces Equipment						14,765,571	15,579,133
Modular Small Arms Ranges						9,141,366	8,487,800
Emergency Management							
CBRN Detection & Decontamination						2,827,359	6,576,067
Total				**$267,471,000**	**$343,587,000**	**$454,980,000**	**$454,980,000**

1. A decrement of $5,020,000 was applied to ANG FY 2013 NGREA due to FY 2013 sequestration reduction allocation.

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Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No

Service Does Not Use Substitution to Satisfy Major Item Equipment Requirements

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC top ten prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	F-16 AESA Radar Test and Initial Fielding (Phase 1)	24	24	$10,750,000	$258,000,000	ANG F-16 Block 25/30/32/40/42/50/52 aircraft require Active Electronically Scanned Array (AESA) radars to effectively execute doctrinally tasked mission sets including homeland defense. AESA radars provide a critical capability for Aerospace Control Alert (ACA) F-16s to detect and track multiple airborne targets of interest in dense civilian air traffic environments near major population centers. AESA radars will improve the capability of ANG F-16's in diverse mission sets, including close air support, surface attack, and defensive counter-air. Additionally, AESA radars eliminate several components associated with mechanical radars, thus improving reliability and reducing sustainment costs.
2	C-130 Avionics Modernization Plan (AMP) Phase 1 and 2	147	147	$8,000,000	$1,176,000,000	This two phase program will first upgrade the C-130H fleet to comply with Federal Aviation Administration (FAA) Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM) requirements. These upgrades meet International Civil Aviation Organization 2020 requirements. AMP Phase 2 will upgrade analog displays to glass displays and provide the digital backbone necessary to allow continued modernization of the C-130H. Additionally, planned upgrades to navigation systems, defensive systems, and flight management hardware/software will provide operational effectiveness well into the future.
3	Mobile/Deployable Remotely Piloted Aircraft (RPA) Sense and Avoid Capability	9	9	$2,500,000	$22,500,000	The current Remotely Piloted Aircraft (RPA) configuration and equipment, along with international and FAA safety requirements, limit the ability to operate RPAs in international and domestic airspace. RPA flight operations require specific, International Civil Aviation Organization (ICAO), FAA, or foreign approvals, which restrict aircraft airspace routing and altitude. These restrictions inhibit aircrew training and degrade operational flexibility during Federal and state missions. An RPA operating with a Ground-Based Sense and Avoid (GBSAA) system meets the requirement of collision-avoidance contained in the ICAO Rules of the Air and FAA Federal Aviation Regulations (FAR). GBSAA systems incorporate low cost commercial off-the-shelf active radar sensors to provide ANG with an affordable, scalable, and transportable sense and avoid system.
4	Multi-Mission Design Series Real Time Information In the Cockpit (RTIC) for KC-135 Aircraft	170	170	$750,000	$127,500,000	Provides secure line-of-sight and beyond line-of-sight radios and data link to enable KC-135 aircrews to participate in network-centric operations. Provides continuous positions of friendly and hostile forces to expedite mission execution. Enables rapid re-tasking of aircraft to maximize efficiency of refueling operations.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
5	C-130 Propulsion Improvements	147	147	$7,750,000	$1,139,250,000	Provides efficiency and performance improvements for the C-130H model aircraft. Although the overall size of the H-model fleet may decrease over time, the ANG will continue operating this aircraft for the foreseeable future. As a result the C-130H can and should have an established modernization program for all aspects of the weapon system. Propulsion modernization is three different initiatives including the 3.5 engine upgrade, NP2000 eight-bladed propeller, and the Electronic Propeller Control System (EPCS). The 3.5 engine program updates the compressor and turbine stages of the T56 engine, and the resulting engines provide a 10% fuel savings and a 24% improvement in time on wing. The NP2000 eight-bladed propellers improve takeoff performance and low speed power, and significantly reduce maintenance requirements and deployed spares. The EPCS replaces mechanical control systems with digital controls that improve accuracy, eliminates all planned maintenance, and significantly improves the reliability of the components. When combined these systems will improve the overall efficiency, improve the performance, and extend the life of the T56 engines.
6	Digital Radar Warning Reciever (RWR) (C-130/F-16/C-17)	298	298	$735,000	$219,030,000	ANG aircraft perform demanding missions in close proximity to radio frequency (RF) based threats. Combat plans rely heavily on airlift for logistical support to front-line troops, requiring mobility aircraft to operate closer to adversary RF surface-to-air missile systems. At present, ANG C-130Hs have limited to no RF detection capability, and ANG C-17s currently do not have onboard radar warning receiver (RWR). The current F-16 Block 40/42/50/52 electronic warfare (EW) suite processor computers were designed in the 1980s and are not configured to provide advanced EW systems integration. Increased situational awareness is needed to correlate onboard and off-board threat detection, terrain masking, and optimized dynamic rerouting capabilities to avoid or minimize exposure to threats. A RWR with geolocation capability in dense RF environments is critical for all ANG C-130H, C-130J, and C-17 aircraft. A fully automated and integrated electronic attack suite processor enables ANG Block 40/42/50/52 F-16C aircraft to fully integrate existing and planned upgrades to the F-16 EW suite.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
7	F-15 Conformal Fuel Tanks	115	115	$3,700,000	$425,500,000	Adding conformal fuel tanks (CFTs) and additional weapons stations to the F‑15C/D provides the single greatest impact to combat operations planning for air dominance through 2040. These modifications are vital elements of the Air Component Commander's ability to deliver persistent, lethal air superiority. CFTs enable one formation of F‑15s to provide nearly twice the normal duration of coverage in contested environments without the need for air refueling support or landing to reload weapons. CFTs also streamline weapons development and integration for all versions of F‑15s through standardized weapons communication, thereby enabling the exploitation of rapid evolutions in weapons development throughout the F‑15 fleet. Combatant commands can quickly exploit the advantages of a common F‑15 fleet if all aircraft readily accommodate advanced weapons or off-the-shelf defensive countermeasure upgrades, such as a pylon-mounted fiber-optic towed decoy. With an aging air refueling fleet, anti-access/area denial (A2AD) challenges, and a decreasing number of air dominance platforms, F-15 CFTs help to mitigate the impact of these critical limitations.
8	Mobility Air Forces (MAF) Simulators	16	16	$8,425,000	$134,800,000	The ANG currently has 23 C-130 wings but only possesses one high fidelity simulator. In order to meet training requirements, a mix of both high and medium fidelity simulators are required, including 3 additional C-130J Reconfigurable Weapon System Trainers (RWST), 2 additional C-130H Weapon System Trainers (WST), 8 additional C-130H Multi-Mission Crew Trainers (MMCT), and 3 C-130J Multi-Mission Crew Trainers.
9	Targeting Pod Upgrades	250	250	$920,000	$230,000,000	The ANG utilizes a large number of advanced targeting pods (ATP) across multiple aircraft types. ATPs give ANG aircraft precision targeting capability and the ability to get accurate coordinates of objects of interest, the ability to observe areas of interest, and an improved navigation capability, day or night. The ANG plans to utilize ATP capabilities on additional platforms. The ANG is also evaluating several ATP upgrades that will allow improved communications and sensing. ATP upgrades allow ANG platforms to take advantage of the new capabilities without incurring expensive Group A aircraft modification costs. ANG's goal is to obtain an open architecture in all of its ATPs. This will allow the utilization of available space for the latest technological advances and the ability to adapt ATPs to tomorrow's needs. Open architecture ATPs will also allow easy swapping of an ATP's components and software, thereby changing its capabilities based on mission requirements. ANG requires new ATPs for aircraft that do not have them, and modification of its current ATP inventory with new open architecture.
10	RPA Ground Control Station (GCS) Modernization	34	34	$353,000	$12,002,000	The MQ-1/9 cockpit, referred to as the Ground Control Station (GCS), was originally designed only as a test control station for new Remotely Piloted Aircraft (RPA) technology. Without further development of the cockpit system, urgent operational and combat needs pressed it into service as the actual operating console for the GCS.The inefficiencies of the GCS cockpit limit aircrew ability to fly the aircraft and manage the mission. The GCS's awkward human machine interface was the cause of aircraft accidents, mission effectiveness degradation, and mission failure.

III. Air Force Reserve Overview

A. Current Status of the Air Force Reserve

1. General Overview

The Air Force Reserve (AFR) has 34 flying wings with 29 unit equipped squadrons and 44 associate units. There are also 11 associate units in the AFR operating space mission partnerships: satellite command and control; missile warning; Joint Space Operations Center; warfare center research, development, and testing; space aggressor; and the National Security Space Institute. Additionally, the AFR has more than 620 operations and mission support units equipped to provide a wide range of services including medical and aeromedical evacuation, aerial support, civil engineering, security forces, intelligence, communications, mobility support, logistics, and transportation operations.

Top AFR Equipping Challenges

- **Defensive Systems:** Improve aircraft survivability during combat operations
- **Data Link and Secure Communications:** Improve/provide voice and data communications for combat missions
- **Diminishing Manufacturing Sources and Obsolescence Issues:** Modernize avionics and recapitalization of aging aircraft
- **Precision Attack:** Improve targeting and survivability

Included in the AFR inventory are 366 aircraft and 20 simulators comprised of the A-10, B-52, C-5, C-40, C-17, C-130H/J, HC-130, WC-130J, F-16, HH-60, and KC-135. These units, aircraft, crews and support personnel stand ready for assignment to the Air Combat Command, Air Education and Training Command, Air Mobility Command, Air Force Space Command, National Reconnaissance Office, and Air Force Special Operations Command, as well as unified commands upon activation.

The AFR is fully engaged across the full spectrum of operations, providing day-to-day operational capability to maintain ongoing missions while retaining the strategic capacity to respond to national crises. Over the last year, roughly 4,600 Reservists contributed each day to global Air and Space Expeditionary Force (AEF) deployments and day-to-day missions such as cargo airlift, Single Integrated Operational Plan nuclear alert, Reaper and refueling operations, and Joint Chiefs of Staff and Major Command (MAJCOM) exercises. The AFR provided direct and immediate domestic front response and as well as disaster relief for people and communities affected by U.S. western wildfires. Throughout this period, the Air Force Reserve Command (AFRC) was the fourth largest of 10 MAJCOMs contributing to Total Force AEF requirements, providing an average of eight percent of the forces supporting Theater Security Packages and Operations Coronet Oak, Noble Eagle, and Enduring Freedom with a zero reclama rate.

In May 2015, the Secretary and Chief of Staff, United States Air Force, released their 20-year strategy, calling for the Nation to provide a strategic framework that will shape the Air Force's future. It highlighted how we will deliver Global Vigilance, Global Reach, and Global Power in agile and innovative ways—appropriate for the future we face. Citizen Airmen of the AFR continue to keep pace with the dynamic environment, presenting capability in support of Joint Operations while supporting the Total Force effort. It is crucial the AFR properly equip our Airmen with the resources they need to effectively accomplish their mission. The National Guard

and Reserve Equipment Appropriation (NGREA) has played an important role in preserving and modernizing critical AFR resources.

The AFR operates a warfighter-driven requirements process. Each Numbered Air Force and the Agile Combat Support (ACS) council submits an annual prioritized requirements list that is integrated and ranked through the Headquarters AFRC corporate process into the Prioritized Integrated Requirements List (PIRL). The PIRL is then presented to the AFRC Commander for approval. The PIRL executable items are extracted from this list based on “Priority”, and used to determine the AFR's Fiscal Year Procurement List. Based on these requirements, the AFR continues to effectively use NGREA to modernize aging equipment and maintain leading-edge combat capability. The appropriation bolsters modernization of critical Reserve Component (RC) equipment in the three major areas: Mobility Air Forces (MAF), Combat Air Forces (CAF), and ACS. Over the past several years, the AFR used NGREA funds for several programs in support of A-10s, F-16s, C-130s, KC-135s, C-40s, information systems, and simulators. A-10s and F-16s received upgrades to systems for in-helmet targeting, cockpit displays, airborne rescue radios, advanced friend/foe identification, and aircraft weapon delivery. C-130 upgrades included advanced communications, armor, electronic propeller control system, crashworthy seats, and an upgraded airborne spray system. Other major NGREA expenditures included KC-135 large aircraft infrared countermeasures (LAIRCM), C-40 high speed data upgrades, enterprise land mobile radios, F-16C Multi-Task Trainers, and simulator upgrades across various weapon systems.

The AFR is effectively addressing Congressional concerns that NGREA obligation rates do not meet OSD goals. An out-year projection of the AFR's procurement plan assists Air Force Materiel Command (AFMC) in planning acquisition workload and contracting strategy. The AFR is presenting three-year procurement plans to AFMC using courses of action that depict multiple funding scenarios. The longer planning horizons allow earlier initiation of requirements documents to ensure lead command requirement approval prior to allocation of NGREA. The AFR has implemented processes to ensure that acquisition planning is in place prior to the receipt of funds so that proposal requests can be quickly issued. Contractual options or other contractual vehicles allowing for flexible order quantities have also been put in place where possible.

a. Mobility Air Forces

The majority of the AFR capability exists in the MAF, which contributes a significant amount of aircrews in diverse mission areas at the highest levels of force readiness. These include unit equipped squadrons, classic associations, active associations, and Formal Training Units (FTUs), all together covering 18 percent of aerial refueling, 18 percent of tactical airlift, 30 percent of strategic airlift, 100 percent of Air Force aerial spray, and 100 percent of Air Force weather reconnaissance missions. Currently, the AFR owns and maintains C-5, C-17, C-130H/J, WC-130J, KC-135, and C-40C aircraft and equipment.

The C-5 Galaxy provides the Air Force with inter-theater airlift in support of U.S. national defense. The AFR operates C-5 aircraft at the 433rd Airlift Wing, Lackland Air Force Base (AFB), Texas, and at the 439th Airlift Wing, Westover Air Reserve Base (ARB), Massachusetts. The 433rd Airlift Wing is home to the Air Force's A and B-model C-5 FTU, which supports aircrew training for the entire C-5 fleet. The Reliability Enhancement and Reengineering

Program (RERP), scheduled for FY 2015–FY 2018, is expected to impact aircraft availability and mission capability at Lackland and Westover throughout the duration of the modification. At the completion of RERP on the AFR C-5s, the entire inventory will be converted to the C-5M, and the 433rd Airlift Wing will assume the C-5M FTU from the Active Component (AC). The AFR associates with the AC on C-5 aircraft at the 512th Airlift Wing, Dover AFB, Delaware, and 349th Air Mobility Wing, Travis AFB, California. Existing and future modernization requirements for the C-5 include a brake monitoring system, flare dispenser switch, next-generation missile warning system, secure voice and data communication, and an integrated situational awareness display.

The C-17 Globemaster III provides the Air Force with inter-theater and intra-theater airlift in support of U.S. national defense. The AFR operates C-17s at the 452nd Air Mobility Wing, March ARB, California, and the 445th Air Mobility Wing, Wright-Patterson AFB, Ohio. The AFR associates with the AC on C-17 aircraft at the 315th Airlift Wing, Charleston AFB, South Carolina; the 446th Airlift Wing, McChord AFB, Washington; the 514th Air Mobility Wing, McGuire AFB, New Jersey; the 512th Airlift Wing, Dover AFB, Delaware; the 349th Air Mobility Wing, Travis AFB, California; and the 730th Air Mobility Training Squadron, Altus AFB, Oklahoma. Existing and future modernization requirements for the C-17 include extended-range fuel tank/on-board inert gas generating systems, upgraded aircraft defensive suites, and data links. Currently, AFR is funding extended range fuel tank/on board inert gas generating system with NGREA funds. Air Mobility Command (AMC) pulled the funding for their remaining three installs, which resulted in the Air Reserve Components purchasing the last remaining installs scheduled for FY 2016 and FY 2017.

The C-130 Hercules provides the Air Force with capability to take off and land on short, unimproved runways normally found during austere operations. The C-130H provides rapid transportation of personnel or cargo for delivery day or night by parachute or landing. It can also be used for aeromedical evacuation of injured personnel. The AFR maintains C-130H aircraft at the 94th Airlift Wing, Dobbins ARB, Georgia; the 908th Airlift Wing, Maxwell AFB, Alabama; the 913th Airlift Group, Little Rock AFB, Arkansas; the 914th Airlift Wing, Niagara Falls Air Reserve Station (ARS), New York; the 911th Airlift Wing, Pittsburgh International Airport (IAP) ARS, Pennsylvania; the 440th Airlift Wing, Pope Army Airfield, North Carolina; the 910th Airlift Wing, Youngstown ARS, Ohio; the 934th Airlift Wing, Minneapolis-St Paul IAP ARS, Minnesota; and the 302nd Airlift Wing, Peterson AFB, Colorado. The 302nd Airlift Wing at Peterson AFB, Colorado, provides Modular Airborne Firefighting System capability, and the 910th Airlift Wing at Youngstown ARS, Ohio, provides Modular Aerial Spray System capability and is tasked as the only large area fixed-wing aerial spray capability within DOD to control disease-carrying insects, pest insects, and oil spill dispersal. Existing and future modernization requirements for the C-130 include LAIRCM upgrades, avionics, single-pass precision drop capability, integrated electronic warfare suite, secure/beyond line-of-sight communication capability, the modular aerial spray system, and electronic propeller control and balancing systems. AFR is currently funding the Modular Aerial Spray System with NGREA. The current aerial spray system is over 20 years old, and parts are becoming obsolete and no longer in production making the system difficult to maintain. NGREA funded both secure/beyond line of sight communication and electronic propeller control system, and installs will run through 2016. Single-pass precision drop and integrated electronic warfare suite are currently being tested and will be funded with NGREA once these programs become executable.

The C-130J is the latest and most advanced version of the C-130, with more fuel efficiency and greater range than previous designs. With increased reliability and maintainability, the C-130J reduces the cost of ownership by as much as 45 percent less than older C-130 models. The AFR maintains C-130J and WC-130J aircraft at the 403rd Air Mobility Wing, Keesler AFB, Mississippi. The Wing's 815th Airlift Squadron C-130Js support ground operations through the delivery of paratroopers and equipment to austere runways at forward bases. They also conduct humanitarian relief missions and can be used for medical evacuations. The Wing's 53rd Weather Reconnaissance Squadron maintains WC-130Js to provide ongoing Hurricane Hunter support to National Hurricane Hunter and National Winter Storm operation plans. These aircraft will also need modernization of communications, navigation, and surveillance capabilities to meet future air traffic management and flight safety standards. AFR is using NGREA to fund LAIRCM Block 20 on the C-130J's at Keesler. Installs should be completed in the first quarter of FY 2016.

The KC-135 Stratotanker provides worldwide air refueling and strategic airlift in support of U.S. national defense. The AFR operates KC-135R aircraft at the 434th Air Refueling Wing, Grissom ARB, Indiana; the 452nd Air Mobility Wing, March ARB, California; the 459th Air Refueling Wing, Andrews AFB, Maryland; the 507th Air Refueling Wing, Tinker AFB, Oklahoma; and the 916th Air Refueling Wing, Seymour-Johnson AFB, North Carolina. Overall tanker force structure will increase with the addition of the 940th Air Refueling Wing, Beale AFB, California. Existing and future modernization requirements for the KC-135 include modifying voice, data link, and data transfer capabilities as well as LAIRCM to enhance self-defense capabilities. AFR is only funding LAIRCM with NGREA. AFR will modify 37 aircraft and rotate 9 pods throughout the command. For FY 2016, AFR plans to enter into a joint program with the Air National Guard to equip the entire KC-135 fleet with data link and data transfer capabilities.

The C-40C provides worldwide air transportation for the Executive Branch, Congressional members and delegations, DOD officials, high-ranking U.S. and foreign dignitaries, as well as other numerous operations support needs. The 932nd Airlift Wing, at Scott AFB, Illinois, is dedicated to providing the highest level of service to support war, peacetime, homeland defense, and contingency requirements for operational support airlift travel teams, critical missions, and DOD senior executives. Existing and future modernization requirements for the C-40C include crew rest kits to expand mission profiles, a fuel inerting system to meet Federal Aviation Administration compliance, and selective availability anti-spoofing module for navigation security. AMC has prioritized these requirements as their top three priorities and AFR will rely on lead command to fund. AFR is researching the possibility of using NGREA to fund its remaining three aircraft with Crew Rest Seats instead of waiting for lead command to fund.

b. Combat Air Forces

The Air Force Reserve makes up approximately six percent of the CAF forces in the Air Force. Currently, the AFR has B-52, A-10, F-16, HH-60, HC-130, and Guardian Angel units where the AFR owns and maintains the aircraft and equipment.

The B-52 Stratofortress serves as the workhorse of the conventional bomber fleet possessing intercontinental range and a large, diverse weapons payload. The AFR maintains B-52 aircraft assigned to the 307th Bomb Wing, Barksdale AFB, Louisiana, and is currently the only command that produces new aircrews for this aircraft through the Flying Training Unit program, providing 100 percent of the formal training for B-52 aircrew combat employment. Future

modernization requirements for the B-52 include installation of Digital Mission Data Recorders and LITENING Generation Four (G4) pods.

The A-10 Thunderbolt II is an Air Force ground attack fighter. AFR maintains A-10 aircraft at the 442nd Fighter Wing, Whiteman AFB, Missouri, and the 924th Fighter Group, Davis-Monthan AFB, Arizona. Since 2007, the AFR has teamed with ACC to maintain A-10 associate units at Moody AFB, Georgia, and Davis-Monthan AFB, Arizona. The AFR A-10s from Whiteman AFB, Missouri, deployed to Afghanistan in the spring of 2014 to fill 180-day deployments to support an AEF rotation. This deployment was the first use of the new combat approved fuel tank, the LARS v12 search and rescue radio, and the second A-10 deployment to employ the NGREA-purchased helmet-mounted targeting display. The new helmet display has proved to be a tactical and technological success. The new combat fuel tank has significantly improved on-station times keeping aircraft over the battlefield longer. AFR A-10s have received an onboard oxygen generation system to help them operate from austere locations. Existing and future modernization requirements for A-10 aircraft include an anti-jam Global Positioning System (GPS) capability, night vision compatible landing gear lights, installation of a parking brake, digital integrated audio systems, and cockpit central display units.

The F-16 Fighting Falcon provides air-to-air and air-to-ground combat capabilities in a single-engine multi-role tactical fighter aircraft. The AFR operates F-16s at the 301st Fighter Wing, Naval Air Station Joint Reserve Base, Ft. Worth, Texas, and the 482nd Fighter Wing, Homestead ARB, Florida. In the winter of 2013 AFR F-16s deployed to Afghanistan for a mix of 45, 90, 135, and 180 day deployments. This was the first F-16 deployment to employ the new NGREA-purchased helmet-mounted targeting capability and the new multifunction high definition smart display. The new helmet targeting system and smart display have proven to be tactical and technological successes. AFR F-16 units are preparing for deployments in early FY 2016. AFR continues to install smart display, helmet-mounted targeting, advanced identification friend foe equipment, and additional ARC-210 radio during scheduled F-16 depot maintenance. The additional ARC-210 radio provides simultaneous secure line-of-sight (SLOS)/beyond line-of-sight (BLOS) communications capability. Existing and future modernization requirements for the F-16 include a "technology refresh" for the GPS/Inertial Navigation System (INS), which provides jamming resistance improving accuracy and reliability; a three-dimensional audio system upgrade that significantly improves situational awareness, threat reaction, and communication intelligibility; a missile warning system to provide protection against the proliferation of shoulder fired missiles; a digital upgrade to the radar missile warning system providing greater sensitivity and accuracy improvements; and a new radar processor that improves reliability and performance. Radar upgrades are estimated to save $6M per year while increasing survivability and combat effectiveness in current and future threat environments.

The HH-60G Pave Hawk mission is to conduct day or night operations into hostile environments to recover downed aircrew or isolated coalition personnel. The AFR operates HH-60G aircraft at the 920th Rescue Wing, Patrick AFB, Florida, and at the 943rd Rescue Group, at Davis-Monthan AFB, Arizona. AFR HH-60G Pave Hawk search and rescue helicopters had three to four aircraft continually deployed to Afghanistan during 2014. Volunteer and mobilized AFR crews and maintainers launched over 2,400 sorties logging 1,500 hours and have been credited with over 800 saves and 860 assists. Existing and future modernization requirements for the HH-60G include Smart Color Multi-Function Display, rotor brake, radar warning receiver, hostile fire

indication system, communications suite, helmet-mounted integrated targeting, and blue-force tracker.

The HC-130N/P conducts day or night operations to recover downed aircrews or other isolated personnel from hostile or denied environments during war. They provide air refueling of recovery force helicopters and tactical delivery via airdrop or air-land of rescue personnel watercraft, all-terrain vehicles, and direct assistance in advance of recovery vehicles. Current AFR HC-130N/P inventory is based at the 920th Rescue Wing, Patrick AFB, Florida. The AFR HC-130 fleet is currently integrating a state-of-the-art integrated electronic warfare suite. Existing and future modernization requirements for the HC-130N/P include the hostile fire indication system and communication system upgrades. The AFR is modernizing the HC-130 fleet's communication, navigation, and surveillance capability to meet future air traffic management and flight safety standards, a top AFR priority.

Guardian Angel (GA) is an Air Force weapon system consisting of combat rescue officers; para-rescuemen; and survival, evasion, resistance, and escape specialists operating together to provide a dedicated capability to locate and recover isolated personnel in support of combat search and rescue and personnel recovery programs. The AFR GA personnel and equipment are assigned to the 920th Rescue Wing, Patrick AFB, Florida. Subordinate 920th Rescue Wing GA units are located at Davis-Monthan AFB, Arizona, and Portland IAP, Oregon. Existing and future modernization requirements for GA include replacement and upgrade of existing communication systems, self-defense systems, and personnel recovery mission equipment.

c. Agile Combat Support

Agile Combat Support enables all other Air Force core functions by providing the essential capabilities and functions to deploy, establish, operate, and maintain operations of an airbase along with the associated services (sustain), and recover coalition air and space forces. The AFR provides deployable combat support and mission generation capability to the Air Force in various mission areas, to include:

- 19 percent of the AF's Explosive Ordnance Disposal capability
- 15 percent of the AF's Prime Base Engineer Emergency Force (Prime BEEF) civil engineer capability
- 22 percent of the AF's Rapid Engineer Deployable Heavy Operations Repair Squadron Engineers (RED HORSE) heavy construction capability
- 14 percent of the AF's Security Forces capability
- 28 percent of the AF's Logistics Readiness Officer capability
- 9 percent of the AF's Petroleum, Oils, and Lubricants capability
- 9 percent of the AF's Material Management capability
- 10 percent of the AF's Ground Transportation capability
- 20 percent of the AF's Logistics Planning capability
- 45 percent of the AF's Aerial Port capability.

Major ACS vehicle procurements are integrated with CAF and MAF modernization efforts that support Reserve contributions to AF missions. Other AF priorities have increased pressure on the vehicle replacement account, with FY 2014 and FY 2015 cuts affecting all components. At the beginning of FY 2014, the AFR vehicle fleet was older than the AF fleet in five categories: passenger vehicles, cargo carriers, materials handling equipment, runway clearing vehicles, and construction equipment. The AFR and Warner Robins Air Logistics Center (WR-ALC) have conducted several efforts that have partially mitigated the effects of AFR vehicle fleet age and shortfalls. These efforts include authorization reductions, transfers, and vehicle procurement of $4.5M in FY 2014 and another projected $6.9M in FY 2015. However, the total AFR vehicle procurement shortfall as of October 2015 is $15M.

2. Current Status of Equipment

a. Equipment On-hand

Table 1 Consolidated Major Item Inventory and Requirements provides projected RC major equipment requirements and on-hand inventories to meet assigned missions. These platforms include air refueling, air support, airlift, bomber, fighter, and rescue aircraft.

b. Average Age of Major Items of Equipment

The average age of Air Force Reserve aircraft ranges from 11 years for the C-40Cs to 56 years for KC-135s and B-52s. As aircraft become older, there is a direct correlation to the demand for increased Operation and Maintenance (O&M) funding to maintain capability. The following factors drive increased funding demand: 1) fewer vendors, as a result of industry shifts to newer aircraft, create increased costs for replacement parts, 2) less-efficient aircraft drive up flying hour costs, and 3) mean-time-between-failure decreases. Combined, these factors increase maintenance requirements and decrease aircraft availability, and therefore must be mitigated to sustain the required capability needed to meet national defense demands.

See *Table 2 Average Age of Equipment* for the average age of major equipment items as of October 1, 2015.

c. Compatibility of Current Equipment with AC

Air Force Reserve equipment requires compatibility with the AC to support applicable AF missions, with the exception of "unique" missions performed by the AFR (e.g., weather, aerial spray, and aerial firefighting.) This compatibility with the AC is also critical to ensuring the Selected Reserve has the ability to train to AC standards and be ready to operate with AC counterparts. With Congressional funding received to date, the AFR has been able to keep its mission equipment compatible with the AC. With the average age of AFR aircraft approaching 50 years, it is becoming more apparent that replacement of those aircraft is necessary. Maintainability, mission capability, AC compatibility, and increasing operational costs dictate replacement in the near future of almost the entire AFR fleet. The AC has active recapitalization programs in place that do not always include replacement of AFR aircraft. Near-term replacement of HC-130, C-130H, KC-135, A-10, F-16, and HH-60 aircraft combined with the fiscal restraints in place, has led to some AFR aircraft not being included in recapitalization plans or in AFR replacements moved further out into the future.

d. Maintenance Issues

The Air Force Reserve is monitoring several maintenance issues. For the MAF equipment, AFR is tracking any un-commanded rudder movements for a KC-135 fleet-wide study of aircraft Dutch Roll anomalies. AFR has had eight KC-135 anomalies since the loss of the AMC KC-135 in May 2013. This effort is expected to continue until Engineering Assignment is complete. For the CAF equipment, AFR is tracking several fleet-wide wear issues on the A-10 fleet related to the age of the aircraft, and the F-16 system program office has identified a high safety risk related to potential F-16 canopy structural fatigue failure that could lead to aircraft grounding. Inspections have been accelerated to address these issues. Combat rescue equipment continues to show increasing signs of age and overuse due to high demand of a very low number of airframes. The HH-60 fleet has serious structure issues, including cracks in 80 percent of aircraft 308 beams which stretch over the roof of the helicopter and support as much as 20,000 pounds when the aircraft is fully loaded. Legacy HC-130 aircraft are scheduled to be replaced over the next seven years, although the plan may be altered based on severe corrosion within the AFR fleet.

e. Diminishing Manufacturing Sources and Material Shortages (DMSMS)/Obsolesence

DMSMS/Obsolescence is an increasingly difficult problem for DOD weapon systems because the manufacturing lives of many critical items get shorter while the life cycles of military weapon systems keep increasing. As discussed in paragraph 2.b. above, Average Age of Major Items of Equipment, increasing weapon system life cycles and the accompanying DMSMS issues are an AFR issue.

Traditionally, efforts to mitigate the effects of DMSMS have been reactive; that is, the effects are addressed only when they are seen. This reactive approach to DMSMS solutions leads to decisions that put a premium on faster solution paths with attractive short-term gains to avoid system inoperability, while ignoring the long-term solution paths that would lead to generic families of solutions or larger-scale solutions with the capability of avoiding future DMSMS issues. To solve DMSMS issues with lower overall cost, DMSMS solutions must change from reactive to proactive. The building blocks of effective proactive management of DMSMS are established during the design and development of systems.

DMSMS management is a multidisciplinary process to identify issues resulting from obsolescence, loss of manufacturing sources, or material shortages; to assess the potential for negative impacts on schedule and/or readiness; to analyze potential mitigation strategies; and then to implement the most cost-effective strategy.

Obsolescence is not synonymous with DMSMS. In the context of DMSMS management, an item is obsolete if it is out-of-date and superseded by something new. An item may be obsolete, but if it is still in production or there is sufficient stock in inventory to meet all future demands, there is no DMSMS issue.

DMSMS management is inherently linked with reliability, maintainability, supportability, and availability. Within this context, it is important to plan for, minimize, and manage the risks associated with DMSMS issues, due to their detrimental impact on materiel readiness, operational mission capability, safety of personnel, and affordability.

Materiel readiness is an immediate and urgent concern for the warfighter. Missions are affected if equipment cannot be supported; either the equipment is not available for the mission, or it cannot be sustained throughout the mission. DMSMS issues can negatively affect supportability if the items needed to repair a system are not available or are in scarce supply. It is unacceptable for a system to be non-mission-capable due to a DMSMS issue. To allow a DMSMS situation to progress to the point of affecting a mission (because items are not available) is contrary to DOD policy and is an indication of ineffective DMSMS management. In addition, ineffective DMSMS management can cause rapid escalation of the costs for items.

A robust DMSMS management program is the most effective and efficient way to minimize readiness risks due to DMSMS issues, deliver better buying power, and improve overall life-cycle management.

From an AFRC/A4 perspective, DMSMS drives availability of aircraft to meet mission requirements as long contract/procurement/manufacture times extend repair times.

From an AFRC NGREA perspective we must closely coordinate with our modernization partners, AFRC/A4 and the AFMC weapon system program offices (SPOs), when we are executing modernization efforts that are not or were not programs of record worked by the lead command and the appropriate system program office. We must ensure A4 is involved in the earliest discussions with the AFMC SPOs and the SPOs are updating their Life Cycle Sustainment Plans (LCSPs) to incorporate support of our equipment. With diminishing budgets it is critical we work with the SPOs to understand the predicted DMSMS issues and the cost of avoiding/mitigating those issues through a DMSMS management program.

Specific examples include C-130 Modular Airborne Spray System (MASS) and the ALR-69A Digital Radar Warning Receiver (RWR) which replaces the analog RMR addressing DMSMS issues and improving capability.

f. Modernization Programs and Shortfalls

The AFR list of modernization shortfalls stresses aircraft defense, targeting, safety, and communications. The following paragraphs provide highlights, and *Table 8 Significant Major Item Shortages* lists shortfalls identified through the PIRL and the AFR FY 2016 Equipment Modernization List.

Modernization of aircraft is required to maintain or reverse degraded capabilities due to evolving threats, materiel age, DMSMS, and obsolescence. Major AFR MAF programs include upgrades for air traffic management, modular aerial spray systems, secure communications, missile warning and cockpit electronics. Major AFR CAF modernization programs include helmet-mounted targeting systems, avionics and display updates, commercial fire control computers, hostile fire indication systems, mission data recording systems, helicopter rotor brakes, and Guardian Angel equipment. These efforts directly address capability shortfalls identified by theater combatant commanders during combat operations.

LAIRCM’s are necessary to provide an integral self-protection system that also complements flare-based defensive systems currently used and to provide increased protection against

advanced and emerging infrared missile threats. This requirement was established in 1998 by the LAIRCM Operational Requirements Document 314-92 for C-5s, C-17s, C-130s, and KC-135s.

AFR C-130Hs require Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) modifications to meet mandated compliance requirements of the International Civil Aviation Organization, Federal Aviation Administration, and other civil aviation authorities. This has been the AFR's number one priority since FY 2015. Legacy C-130H aircraft safety and compliance requirements are being addressed via Avionics Modernization Program (AMP) Increments 1 and 2. This includes CNS/ATM as well as Automatic Dependent Broadcast B (ADS-B) to ensure global airspace access. AMC is currently working the acquisition strategy for AMP Increment 1 and will fund this critical requirement. The savings gained through AMP Increment 1 over the original AMP program will be used to fund the initial start of the AMP Increment 2 effort.

The AFR will continue to equip its 23 unmodified C-130Hs in FY 2016 with the Real Time Information in the Cockpit (RTIC) data link system. These upgrades consist of ARC-210 and Situational Awareness Data Link (SADL) radios to provide crews with advanced SLOS and BLOS communications, situational awareness, and the ability to be dynamically mission re-tasked. This NGREA funded capability was identified as a combatant commander urgent operational need after program initiation.

AFR C-130H Modular Aerial Spray System (MASS) is over 20 years old, no longer in production, and becoming increasingly more difficult and expensive to maintain. A program was initiated with FY 2013 funding to procure a replacement MASS for six C-130H aircraft. This improves system reliability and spray accuracy to meet current and future aerial spray applications directed by the Center for Disease Control and DOD.

AFR C-130H fleet has several shortfalls in its ability to accurately deliver airdrop loads in contested and degraded operations in both instrument and visual meteorological conditions. Effective airdrop operations require early identification of the drop zone (crucial during on-call operations), real-time airdrop damage estimates, real-time winds (altitude to surface), displayed continuously calculated impact point / launch acceptability region, and post drop assessment. The AFR has initial plans for radar upgrades and is exploring the addition of targeting pods to provide a highly accurate all-weather single-pass airdrop capability with significant reduction in human induced errors.

AFR C-130Hs and HC-130s require upgraded propeller systems to increase aircraft maintainability, survivability, and performance. In FY 2015, a small business contract was awarded to Aircraft Engineering and Installation Services Inc. to replace existing malfunction-prone mechanical propeller synchrophasers with a new digital Electronic Propeller Control System (EPCS) on 48 AFR aircraft.

AFR C-130Hs require Night Vision Imaging System (NVIS) lighting to enhance aircrew performance and situational awareness while operating in demanding night tactical environments with night vision goggles. Due to an aging analog avionics cockpit, Diminishing Manufacturing Sources (DMS) and obsolescence issues are a major concern. To address these issues, a digital cockpit is needed to maintain combat effectiveness and maximize survivability.

AFR F-16s and simulators are receiving smart displays; helmet-mounted targeting; advanced identification, friend or foe equipment; and a second ARC-210 radio during scheduled depot maintenance. These programs are ongoing and should complete installs in early FY 2016.

AFR A-10s need critical cockpit modernization of avionics and displays, a jam-resistant GPS/INS, and an improved electronic warfare defensive suite. A-10s have received helmet-mounted targeting, LARS v12 combat search and rescue radio, and On Board Oxygen Generation System during scheduled depot inductions. The helmet-mounted integrated targeting (HMIT) program is ongoing and will require additional funding to complete.

The new LITENING Generation Four (G4) pod has proven to be a tactical and technological success. The AFR will begin upgrading the G4 pod inventory to the Sensor Enhanced configuration in 2015–2016. AFR's pod fleet (77 pods) will be upgraded to the LITENING Digital Port (LDP) configuration by late 2018. LDP will enhance the quality of video and speed of processing capability, as well as maximize the capability of LITENING with the color multi-function display capability inside the cockpit.

AFR B-52s require Digital Mission Data Recorders (DMDR) to maintain combat effectiveness and to effectively accomplish the FTU mission. The B-52 does not currently have any type of mission data recorder or "black-box" due to unusable, obsolete 3/4 inch Airborne Video Tape. B-52 crews must fly missions without recording capability using only pen and paper to write notes. The DMDR would provide recording capability, playback video, audio, and data from the Offensive Avionics System, targeting pods, radios, and interphone. The ability to re-create the mission is an invaluable training aid that empowers mission requirements. Contract award for the DMDR procurement is projected in late 2015.

AFR GA units require unique, often unfunded, training equipment for use in extreme climates, intensive training scenarios, and contingency operations. Ongoing NGREA funded programs include equipment modernization for short-wave infrared night vision devices, weapons accessories, communication equipment, advanced rescue and safety equipment, and personal protective equipment. As a dynamic mission, GA tactics and capabilities requirements constantly change with the operational environment to meet combatant commander needs.

AFR personnel recovery aircraft need hostile fire indication systems to counter the increasing threat from rocket-propelled grenades, anti-aircraft artillery, heavy machine guns, anti-tank guided missiles, and even small arms. This modification upgrades acoustic sensors in six HC-130s and 15 HH-60s, increasing the probability of hostile ground fire detection, and enabling the aircrew to take evasive maneuvers and increase aircraft survivability. The AFR's HH-60G helicopters are among the few helicopters in the personnel recovery community that do not possess rotor brakes required for safe shipboard operations. These brakes limit the time required to slow down the rotor system preventing unintended rotor spin on the ramp or a ship's deck. This increases safety for ground personnel from spinning rotor blades during land and maritime operations.

Finally, AFR support equipment has a current shortfall of approximately $115M for sustainment across all functional areas within the command. Assets required include maintenance stands, aircraft jack testers, cryogenics servicing trailers, corrosion control carts, avionics test stations,

frequency converters, mobile generators, tow bars, and radios. Support equipment fill rates and readiness will remain on par with the AC and achieve the reset to the new strategy, defined in *Sustaining Global Leadership: Priorities for the 21st Century Defense*, given a sustained baseline. Recent efforts to improve execution of the AFR's buy list with WR-ALC resulted in procurement of water jet cutters. Strategic airlift units no longer have to wait for contractors or depots to manufacture parts, saving O&M funds and improving aircraft availability of C-5 and C-17 aircraft.

B. Changes since the Last NGRER

The force structure changes announced with the FY 2013 President's Budget included Air Force plans to retire 82 AFR aircraft in the next few years in 14 states. The FY 2016 President's Budget will keep 10 C-130J aircraft in Mississippi. These actions reduce the AFR inventory by 61 airlift and aerial-refueling aircraft, as well as 21 fighter jets. This retires the AF's oldest aircraft, makes room for newer models, and consolidates similar types of aircraft at common locations as much as possible.

Changes in the status of AFR equipment programs include the following:

- The C-130 RTIC modification has been completed on 25 AFR C-130H aircraft, nine at the 910th Airlift Wing, five at the 914th Airlift Wing, five at the 934th Airlift Wing, five at the 302nd Airlift Wing, and one at the 913th Airlift Wing. RTIC has been utilized to resolve an urgent-operational-need request to provide SLOS and BLOS capability to the combatant commander. RTIC provides crews enhanced situational awareness capability during airlift, airdrop, and other operations. The remaining 23 AFR aircraft will be modified in FY 2016.
- The Simulator and Distributed Mission Operations (DMO) program has made significant advancements this past year in providing better capability in the F-16C Multi-Task Trainers and the A-10C Full Mission Trainers. The 301st Fighter Wing, Joint Reserve Base Fort Worth, Texas, and 482nd Fighter Wing, Homestead ARB, Florida, have recently received delivery of a second fully upgraded F-16C Multi-Task Trainer complete with state-of-the-art 360-degree visual display systems. The expected delivery date for the third and fourth simulators at each of these locations will be February 2017. The AFR Simulator and DMO program experienced a setback when the HH-60G Pave Hawk Equivalent Distributive Repeatable Operational Simulator (PEDROS) was cancelled. Due to be delivered in July 2018 to the 943rd Rescue Squadron, Davis-Monthan AFB, Arizona, and another at the 920th Rescue Wing, Patrick AFB, Florida, in September 2019, the requirement still exists and AFR is working with AFMC on a new acquisition strategy.
- AFR A-10s will receive an upgrade to the landing and taxi lights providing a visible-lights-out night-vision-goggle compatible landing capability. Combat fuel tanks, parking brake, and black-out landing/taxi capability greatly improve AFR A-10's capability to operate covertly from austere landing fields well beyond the capability of conventional fighter aircraft.

- Completion of the A-10C Operational Flight Program Suite 7.b in conjunction with the installation of HMIT and LARS v12, significantly increases search and rescue capability and integrates LITENING G4 and Advanced Targeting Pod capability.

- The F-16 Center Display Unit places a smart color multi-function display on the center pedestal. The Center Display Unit will reduce maintenance and significantly increase aircraft processing capacity. While the F-16s pass through the depot for the installation of the Center Display, HMIT, and ARC-210 radio, they are also receiving four structural modifications. Unfortunately, the structural modifications are significantly increasing the time the aircraft are in depot, thus slowing the modification installs. These programs are ongoing and will require additional funding to complete.

- In addition to incorporating HMIT and Center Display Unit functionality, the F-16 Software Capability Upgrade 8.0 (SCU 8) began fleet-wide installation in February 2013. SCU 8 also brings LITENING G4 Advanced Targeting Pod capability, digital Ethernet connectivity, advanced medium-range air-to-air missile (AMRAAM) digital integration, and many other refinements to the aircraft operational flight program. SCU-8 is fully funded by lead command and should be complete in FY 2016.

- Complete delivery of AFR's 12 new Sensor Enhanced (SE) pods occurred in March 2015. The four remaining block one to G4 upgrades and the first phase of G4 to SE kit upgrades were placed on contract in September 2014. The four block one to G4 upgrades are scheduled for full delivery in February 2016, and 17 G4 to SE kit upgrades are scheduled for full delivery in May 2016.

C. Future Years Program (FY 2017–FY 2019)

1. FY 2019 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2017–FY 2019 major equipment inventories and requirements.

2. Anticipated New Equipment Procurements

Table 3 Service Procurement Program – Reserve (P-1R) lists planned procurements for the AFR from the FY 2017 President's Budget request. *Table 4 NGREA Procurements* provides AFR planned NGREA procurements for FY 2014–FY 2016.

3. Anticipated Transfers from AC to AFR

Table 5 Projected Equipment Transfer/Withdrawal Quantities lists planned AFR transfers for FY 2017–FY 2019.

4. Anticipated Withdrawals from AFR Inventory

Table 5 also lists planned AFR major equipment withdrawals for FY 2017–FY 2019, including the force structure changes discussed in Section II, paragraph B of this chapter.

5. Equipment Shortages and Modernization Shortfalls at the End of FY 2019

Tables 1 Consolidated Major Item Inventory and Requirements and Table 8 Significant Major Item Shortages provide AFR equipment inventories, shortfalls, and modernization requirements.

D. Summary

As discussed above in Section I.A. Air Force Planning Guidance, American Airmen provide *Global Vigilance, Global Reach, Global Power*, which are the prerequisite for successful joint operations, support the objectives presented in the 2014 Quadrennial Defense Review, and meet the military objectives in the 2015 National Military Strategy.

In May of 2015, the SECAF and CSAF unveiled the latest Air Force strategic document, *USAF Strategic Master Plan (SMP),* which combined with the Air Force Strategy, *America's Air Force: A Call to the Future*, comprises the sole strategy for the Air Force. The SMP and its four annexes serve as internal planning documents to guide long-term efforts to organize, train, and equip the Air Force.

One of the main assumptions articulated in the SMP is that the Air Force as an institution will remain fundamentally committed to a multi-component approach throughout the Strategy, Planning, and Programming Process. The SMP further states that we need to capitalize on the evolution of the last several decades.

To exploit the full capabilities of the Total Force, the USAF recognizes that the Active, Guard, Reserve, and civilian components of the Total Force each offer unique capabilities and strengths. The SMP dictates a flexible, responsive force structure and the identification of additional opportunities for integration between Active and Reserve Components.

The SMP foundational assumption on the use of the ARC has shifted from a strategic reserve augmenting AC capacity to a force that is fully engaged and organized in Total Force operationally indistinguishable units. In addition to being a fully engaged Total Force partner, the SMP envisions the RC still providing strategic depth and surge capacity.

"No one is more invested in total force integration than the Air Force," said Lt. Gen. James F. Jackson, the Chief of Air Force Reserve. "Going forward, there is no doubt that our Air Force is going to rely more, not less, on our Reserve and National Guard forces. It is essential to leverage our reserve components more effectively in the current global security environment."

As the fiscal constraints impacting the Total Force continue, NGREA will remain a critical source of funding for aircraft modernization, and mission essential ACS vehicles and support equipment.

Given the USAF SMP's increased emphasis on the RC's Total Force role it is important that USAF, AFR 3080, and NGREA funding be appropriated to support the NMS objectives. Top AFR equipping challenges, including defensive systems, data link and secure communications, strike capability, diminishing manufacturing sources and obsolescence; as well as the ACS support equipment and vehicles necessary to enable point-of-the-spear warfighter mission accomplishment, will remain unfulfilled without the budget support to address the concerns.

The Total Force must be a lean, agile, efficient team that meets national security demands. With the help of the office of the Secretary of Defense and Congress, we will be able to provide the *Global Vigilance, Global Reach,* and *Global Power* that America expects its Airmen to deliver.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature	Equip No.	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Air Refueling							
Air Refueling, KC-135R	KC-135R	$74,000,000	70	70	70	74	74
Air Refueling, KC-46A	KC-46A	n/d	0	0	0	2	2
Air Support							
Weather, WC-130J	WC-130J	$73,800,000	10	10	10	10	10
Airlift							
Airlift, C-130H	C-130H	$32,600,000	56	56	56	56	56
Airlift, C-130J	C-130J	$69,500,000	10	10	10	10	10
Airlift, C-17A	C-17A	$284,000,000	18	18	18	18	18
Airlift, C-5A	C-5A	$207,200,000	5	0	0	0	0
Airlift, C-5B	C-5B	$237,600,000	3	0	0	0	0
Airlift, C-5M	C-5M	$328,000,000	3	11	16	16	16
Airlift, C-40C	C-40C	$80,700,000	4	4	4	4	4
Bomber							
Bomber, B-52H	B-52H	$99,900,000	18	18	18	18	18
Fighter							
Fighter, A-10C	A-10C	$13,000,000	55	28	0	0	0
Fighter, F-16C	F-16C	$21,800,000	54	73	85	85	85
Fighter, F-16D	F-16D	$21,800,000	2	4	5	5	5
Rescue							
Rescue, HC-130N	HC-130N	$23,500,000	1	1	1	1	1
Rescue, HC-130P	HC-130P	$23,500,000	5	5	5	5	5
Rescue, HH-60G	HH-60G	$27,000,000	15	15	15	15	15

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Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Equip No.	Average Age	Remarks
Air Refueling			
Air Refueling, KC-135R	KC-135R	56	
Air Support			
Weather, WC-130J	WC-130J	19	
Airlift			
Airlift, C-130H	C-130H	27	
Airlift, C-130J	C-130J	14	
Airlift, C-17A	C-17A	16	
Airlift, C-5A	C-5A	47	
Airlift, C-5B	C-5B	30	
Airlift, C-40C	C-40C	11	
Bomber			
Bomber, B-52H	B-52H	56	
Fighter			
Fighter, A-10C	A-10C	37	
Fighter, F-16C	F-16C	30	
Fighter, F-16D	F-16D	30	
Rescue			
Rescue, HC-130N	HC-130N	47	
Rescue, HC-130P	HC-130P	53	
Rescue, HH-60G	HH-60G	26	

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Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019
Modification of Inservice Aircraft			
B-52	$15,944,000	$16,531,000	$8,287,000
C-5	1,095,000	1,528,000	1,530,000
C-17A	.	1,032,000	
C-130	876,000	18,020,000	9,241,000
C-135	8,454,000	10,376,000	9,390,000
H-60	6,216,000	6,922,000	3,690,000
Vehicular Equipment			
Passenger Carrying Vehicles	123,000	124,000	127,000
Medium Tactical Vehicles	1,202,000	1,225,000	1,244,000
Items Less Than $5M (Cargo and Utility Vehicles)	3,040,000	3,051,000	3,584,000
Security and Tactical Vehicles			427,000
Items Less Than $5M (Special Purpose Vehicles)	2,922,000	2,124,000	2,159,000
Items Less Than $5M (Materials Handling Equipment)	2,814,000	2,836,000	2,826,000
Runway Snow Removal and Cleaning Equipment	58,000	60,000	62,000
Items Less Than $5M (Base Maintenance Support)	328,000	330,000	325,000
Electronics and Telecommunications Equipment			
Air and Space Operations Center - Weapon System	300,000	300,000	300,000
Information Transport Systems	3,954,000		
Tactical Communications-Electronics Equipment	1,703,000	1,622,000	1,420,000
Base Communications Infrastructure	327,000	333,000	339,000
Other Base Maintenance and Support Equipment			
Items Less Than $5M (Personal Safety and Rescue Equipment)	128,000	114,000	142,000
Mechanized Material Handling Equipment	282,000	285,000	290,000
Base Procured Equipment	100,000	103,000	104,000
Items Less Than $5M (Base Support Equipment)	390,000	117,000	93,000
Total	**$50,256,000**	**$67,033,000**	**$45,580,000**

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016[1]
FY 2014 NGREA Equipment			
Electronic Propeller Control System (EPCS)	$21,170,314		
KC-135 Large Aircraft Infrared Countermeasures (LAIRCM)	8,845,711		
LITENING Targeting Pod Procurement & Spiral Upgrades	8,645,646		
C-130 Large Aircraft Infrared Countermeasures (LAIRCM)	4,195,430		
C-130 Modular Aerial Spray System (MASS)	3,569,104		
C-130 Secure Line-of-sight/Beyond Line-of-sight (SLOS/BLOS) Capability	1,290,326		
C-130 Yoke Mounted Switch (YMS)	157,787		
HH-60 Blue Force Tracker & Remotely Operated Video Enhanced Receiver (ROVER)	4,060,776		
HH-60 Tactical Situational Awareness Data Link (SADL)	300,000		
Chief Information Officer (CIO) Board Project List	4,469,967		
Combined Advanced Identification Friend or Foe (AIFF) with Mode 5/S	2,362,200		
Cockpit Modernization	2,000,000		
Guardian Angel Personnel Recovery Mission Equipment	1,999,999		
A-10 Parking Brake	1,989,000		
Day/Night Helmet Mounted Integrated Targeting (HMIT)	1,800,000		
Electronic Warfare Missile Warning System - Pylon Integrated Dispenser System (PIDS+)	1,243,700		
F-16 Radio (2nd ARC-210)	780,000		
F-16 Commercial Flight Control Computer (CFCC)	600,000		
A-10 Improved Data Modem (IDM)	145,000		
AFR Expeditionary Security Forces Tactical Equipment	100,000		
Support Equipment	100,000		
Vehicles	91,039		
WC-130 Aerial Reconnaissance Weather Officer (ARWO) pallet upgrade	84,000		
FY 2015 NGREA Equipment			
C-17 Extended Range Modification with Enhanced On Board Inert Gas Generating System (OBIGGS)		$10,000,000	
LITENING		8,922,993	
A-10 Anti-Jam Global Positioning System (GPS)		5,100,000	
A-10/F-16 Day/Night Helmet-Mounted Integrated Targeting (HMIT)		4,000,000	
A-10 Parking Brake		458,000	
A-10 PATS70A (Support Equipment)		416,502	
B-52 Mission Data Recorder		3,500,000	
F-16 Center Display Unit (CDU)		2,050,000	
F-16 Second ARC-210 Beyond-line-of-sight (BLOS) with data transfer capability		1,500,000	

Table 4

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2014	FY 2015	FY 2016[1]
F-16 3D Audio (Digital Intercom/Spacial Awareness Audio)		522,706	
F-16 AN/ALR-69A Upgraded Electronic Warfare (EW) Suite		1,000,000	
C-130 Electronic Propeller Control System (EPCS)		7,964,081	
C-130 Real Time Information in the Cockpit (RTIC)		4,078,416	
C-130 Large Aircraft Infrared Countermeasures (LAIRCM)		2,623,995	
HC-130 Information Superiority		600,000	
HC-130 AAQ-36 Forward Looking Infrared (FLIR)		120,000	
KC-135 LAIRCM		1,423,000	
Electronic Warfare Missile Warning System - Pylon Integrated Dispenser System (PIDS+)		2,472,515	
Guardian Angel Personnel Recovery Mission Equipment		1,642,000	
Combined Advanced Identification Friend or Foe (AIFF)		840,792	
HH-60 Smart Color Multifunctional Display Interim Contractor Support (ICS)		615,000	
Expeditionary Forces Tactical Equipment		100,000	
Chief Information Officer (CIO) Board Project List		50,000	
Total	**$70,000,000**	**$60,000,000**	

1. Service FY 2016 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2016 will be provided in next year's NGRER.

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Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019 Qty	Remarks
Air Refueling					
Air Refueling, KC-135R	KC-135R			+4	increase Tinker Primary Authorized Aircraft (PAA)
Air Refueling, KC-46A	KC-46A			+2	
Airlift					
Airlift, C-5A	C-5A	-5			
Airlift, C-5B	C-5B	-3			conversions to C-5M model
Airlift, C-5M	C-5M	+8	+5		
Fighter					
Fighter, A-10C	A-10C	-27	-28		Whiteman/Davis-Monthan mission-design-series (MDS) conversion
Fighter, F-16C	F-16C	+19	+12		Whiteman/Davis-Monthan MDS conversion
Fighter, F-16D	F-16D	+2	+1		Whiteman/Davis-Monthan MDS conversion

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2013 Planned Transfers & Withdrawals							
AFR indicated no planned transfers or withdrawals in the FY 2013 NGRER.							
FY 2013 P-1R Equipment							
Modification of In-service Aircraft							
B-52				$1,141,000	$0		
A-10				17,088,000	3,734,000		
F-16				719,000	110,000		
C-5M				256,803,000	378,059,000		
C-17A				9,818,000	21,107,000		
C-130				13,710,000	24,146,000		
C-135				3,852,000	2,332,000		
H-60				5,263,000	166,000		
Aircraft Replacement Support Equipment				941,000	899,000		
Vehicular Equipment							
Passenger Carrying Vehicles				202,000	301,000		
Medium Tactical Vehicles				2,692,000	0		
Security and Tactical Vehicles				64,000	0		
Electronics and Telecommunications Equipment							
Air Traffic Control & Landing System				603,000	1,218,000		
National Airspace System				1,228,000	1,228,000		
Mobility Command and Control				260,000	145,000		
Theater Battle Management C2 System				145,000	23,000		
Air & Space Operations Center Weapon System				2,000,000	0		
Base Information Infrastructure				353,000	379,000		
Tactical C-E Equipment				341,000	0		
Base Communications Infrastructure				353,000	0		
Communications & Electronics Mods				477,000	0		
Other Base Maintenance and Support Equipment							
Night Vision Goggles				280,000	0		
Mechanized Material Handling Equipment				0	215,000		
Base Procured Equipment				200,000	0		
FY 2013 NGREA Equipment							
LITENING Targeting Pod Procurement & Spiral Upgrades						$47,847,253	$54,024,279
C-130 Electronic Propeller Control System (EPCS)						7,400,000	12,340,103
KC-135 Large Aircraft Infrared Countermeasures (LAIRCM)						11,054,385	7,034,826

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Table 6

FY 2013 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
C-130 Modular Aerial Spray System (MASS)						8,000,000	7,969,686
HH-60 Communications Suite Upgrade						7,500,000	6,917,335
Simulators						15,300,000	14,656,934
C-130 Secure Line-of-sight/Beyond Line-of-sight (SLOS/BLOS) Capability						1,100,000	627,158
A-10/F-16 Helmet-mounted Integrated Targeting (HMIT)						5,499,999	5,498,182
A-10/F-16 Digital Intercom						3,350,000	0
B-52 Mission Data Recording System						800,000	0
F-16 ALR-69A Radar Warning Receiver (RWR)						3,602,000	2,691,142
F-16 2nd ARC-210 Digital Receiver-Transmitter						2,547,000	1,919,303
HH-60 Rotor Brake						3,000,000	0
A-10/F-16 Cockpit Modernization						2,300,000	5,043,291
F-16 Pylon Integrated Dispenser System plus Infrared Missile Warning System (PIDS+)						2,000,000	0
F-16 Advanced Identification, Friend or Foe (AIFF)						2,763,212	625,158
Guardian Angel Tactical Equipment						500,000	459,078
A-10 On Board Oxygen Generation System (OBOGS)						1,117,181	1,388,359
A-10 Parking Brake/Night Vision Imaging System (NVIS) Landing Light						1,786,000	1,219,057
Vehicles						295,000	294,743
HH-60 Smart Multifunction Color Display (SMFCD)/Situational Awareness Data Link (SADL)						280,000	195,858
Support Equipment						927,969	1,536,917
Calculations						100,000	0
A-10 Lightweight Airborne Radio System (LARS) V12						80,000	482,615
HC-130 Information Superiority						750,000	750,000
HC-130 AAQ-36 Forward Looking Infrared (FLIR)						100,000	0
HC-130 Hostile Fire Indication System (AAR-47 BV2 Missile Warning System)						0	1,165,843
Chief Information Officer (CIO) Board Project List						0	3,000,000
Security Forces Tactical Equipment Purchases						0	99,414
WC-130J Satellite Communications (SATCOM)						0	60,719
Total				**$318,533,000**	**$434,062,000**	**$130,000,000**	**$130,000,000**

Table 7

Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No

Service Does Not Use Substitution to Satisfy Major Item Equipment Requirements

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Table 8

Significant Major Item Shortages

NOTE: This table provides a RC top ten prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	C-130 CNS/ATM 2020 Capability (Automatic Dependent Surveillance - Broadcast Out [ADS-B Out])	48	48	$250,000	$12,000,000	This program is designed to bring the C-130H configuration into compliance with selected Air Force Navigation and Safety Master Plan, Required Navigation Performance (RNP) requirements, and other applicable CNS/ATM requirements. Without these modification AFR C-130s will not be in compliance International Civil Aviation Organization (ICAO) mandated 2020 requirement.
2	A-10/F-16/HH-60 Day/Night Helmet Mounted Cueing System	27	27	$459,819	$12,415,000	Upgrade to Air Combat Command program of record to include acoustic sensors and software to alert aircrew subjected to hostile fire and provide the awareness to perform tactical procedures to ensure aircraft and aircrew survivability.
3	C-17 Extended Range (ER)/ On Board Inert Gas Generating System II (OBIGGS)	1	1	$10,000,000	$10,000,000	Modification allows the aircraft to carry an additional 65,000 pounds of fuel and fly an additional 1,800 nautical miles (empty aircraft) when compared to a non-ER C-17As. The added capability reduces wear-and-tear and extends fuel range between air to air refueling. Adding OBIGGS reduces the vulnerability of fuel explosion induced by small arms fire.
4	C-130J Dynamic Retasking Capability (DRC) B Kits (Real Time Information in the Cockpit [RTIC] Roll-on)	2	2	$1,500,000	$3,000,000	Procures additional DRC Group B kits to meet aircrew requirements. The limited number of DRC systems procured under the initial procurement program is insufficient to meet operational and training requirements. DRC provides critical threat, airspace, and C2 information.
5	HH-60 Improved Radar Warning Receiver (RWR) / Radio Frequency (RF) Jammer APR-39D(V)2	15	15	$600,000	$9,000,000	Replaces obsolete analog RWR with an improved all-digital version and integrates the RWR with a radio frequency jammer to increase survivability. Without an upgraded RWR, HH-60 aircrew, Guardian Angels, and recovered personnel will be placed at increased risk from radar-guided surface-to-air missile threats.
6	C-130 Single Pass Precision Air Drop	48	48	$2,000,000	$96,000,000	Incorporates a precision targeting pod application to provide accurate, all-weather, single-pass airdrop capability while minimizing human-induced errors. Upgrades the APN-241 radar and incorporates Light Detection and Ranging (LIDAR) to acquire wind sensing data.
7	B-52/HC-130 Link 16 Data Link	24	24	$300,000	$7,200,000	Link 16 provides real-time, jam-resistant, secure transfer of combat data, voice, and navigation information between dispersed battle elements. With Link 16, aircrews gain situational awareness by exchanging digital data over a communications link in real time.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
8	C-130 Next Generation Missile Warning System Upgrade	48	48	$300,000	$14,400,000	C-130H aircraft are baselined with the Block 10 Large Aircraft Infrared Countermeasures (LAIRCM) system. Block 10 was first installed in 2002 with ultraviolet (UV) missile warning sensors. The KC-135 and KC-46 aircraft will be equipped with the Block 30 next generation LAIRCM system. Block 30 next generation sensors are equipped to address the evolving threat of infrared (IR) surface-to-air-missiles. To meet this threat, C-130Hs need upgraded IR sensors.
9	C-130H Improved Night Vision Imaging System (NVIS) Cockpit Lighting	48	48	$410,417	$19,700,000	With the future of the Avionics Modernization Plan (AMP) program in jeopardy, a permanent NVIS solution needs to be installed. C-130Hs are being tasked to operate in an environment of increasing levels of threat complexity and lethality. Failure to modify the C-130 aircraft with night vision goggle (NVG) compatible aircraft lighting renders combat airlift incapable of meeting user demands to operate at night in a tactical environment.
10	WC-130J Radar Image Transmission Capability	10	10	$50,000	$500,000	National Hurricane operation plans require radar imagery to be transmitted so forecasters can assess storm changes in real time. Current data system does not include the capability to capture radar images and has limited satellite communicatons bandwith to transmit imagery real-time. If not addressed, the 53rd Weather Reconnaissance Squadron cannot meet current requirements.

Chapter 6
United States Coast Guard Reserve

I. Coast Guard Overview

The United States Coast Guard (USCG) is the world's premier, multi-mission, maritime service responsible for the safety, security, and stewardship of the Nation's waters. It is at all times a Military Service and a branch of the Armed Forces of the United States, a federal law enforcement agency, a regulatory agency, a first responder and humanitarian service, and a member of the U.S. Intelligence Community. In the execution of its duties within the Department of Homeland Security (DHS), the Coast Guard serves on the front line for a nation whose economic prosperity and national security are inextricably linked to its maritime interests. To preserve the Nation's interests at home and abroad, the Coast Guard employs its broad authorities, expansive network of interagency, military, and industry relationships, unique operational capabilities and presence, and international partnerships to execute daily, steady-state operations and respond to major incidents. Table 6-1 provides an overview of six overarching DHS programs and the USCG statutory missions that support them.

Table 6-1. Coast Guard Programs and Statutory Missions

DHS Programs	United States Coast Guard Statutory Missions
1. Maritime Security Operations	Ports, Waterways and Coastal Security—Operational Activities
2. Maritime Law Enforcement	Drug Interdiction
	Migrant Interdiction
	Living Marine Resources
	Other Law Enforcement
3. Maritime Prevention	Ports, Waterways and Coastal Security—Prevention Activities
	Marine Safety
	Marine Environmental Protection—Prevention Activities
4. Maritime Response	Search and Rescue
	Marine Environmental Protection—Response Activities
5. Defense Operations	Defense Readiness
6. Marine Transportation System Management	Aids to Navigation
	Ice Operations

Since 1915, when the USCG was established by law as an Armed Force, our mission has been to ensure the safety, security, and stewardship of the Nation's waters. We protect those on the sea, protect the Nation against threats delivered by sea, and protect the sea itself. Employing our unique blend of military, law enforcement, humanitarian, and regulatory capabilities, we prevent incidents when possible and respond when necessary.

As both a federal law enforcement agency and a Military Service, the USCG is uniquely positioned to conduct defense operations in support of the Department of Defense (DOD). To support the National Military Strategy, the Coast Guard conducts Maritime Interception

Operations; Maritime Environmental Response; Port Operations, Security, and Defense; Theater Security Cooperation; Coastal Sea Control; Rotary Wing Air Intercept Operations; and Operations to Combat Terrorism. A key component of the Coast Guard's Defense Operations mission is the Port Security Unit (PSU). A PSU can operate independently in an expeditionary environment or can be embedded within the Navy's Coastal Riverine Force. The eight Coast Guard PSUs are unique because they are principally Reserve-staffed units, consisting of only six Active Component (AC) personnel within a 150 total complement.

Another key asset of the Coast Guard is the Mobile Support Unit (MSU). The MSU, also primarily staffed with Reservists, is responsible for expeditionary logistics support to cutters deploying in support of combatant commanders. The MSU is air, sea, and land deployable within 96 hours of mobilization in support of both contingencies abroad and domestic emergencies.

A. Coast Guard Planning Guidance

While a multitude of factors shape U.S. maritime interests, five areas of strategic focus represent the most pressing demands for Coast Guard operations in the next four years. Although the Coast Guard must be ready for daily operations and a vast array of incidents that will inevitably occur with greater frequency over the coming decades, these five areas of focus provide a unifying strategic agenda for our Service, informing resource and operational decisions. The areas of focus are the result of a risk-informed approach based on our understanding of the strategic landscape. They include:

- Rise and Convergence of Transnational Organized Crime (TOC) Networks
- Imperative for Southern Maritime Border Security
- Increasing Maritime Commerce
- Emerging Cyber Risks to the Maritime Transportation System
- Adapting to Climate Change in the Polar Regions

B. Coast Guard Equipping Policy

The USCG AC owns and manages all equipment, including equipment that is allocated for the Reserve Component (RC). The AC provides equipment for United States Coast Guard Reserve (USCGR) mobilizations or surge operations using existing unit inventories, supporting units, or through procurement procedures using the DHS budget.

C. Plan to Fill Mobilization Shortages in the RC

In FY 2015, approximately 200 Selected Reserve (SELRES) personnel were mobilized in support of overseas contingency operations, compared to 450 in FY 2014. This reduction is due to the end of mission of Redeployment Assistance and Inspection Detachment (RAID) teams and the cessation of military outload operations that previously required Reserve augmentation during Operations Iraqi Freedom and Enduring Freedom. The majority of mobilized personnel served as members of PSUs operating outside the continental United States. Any surge in DOD contingency operations must be accompanied by sufficient funding to ensure proficiency.

D. Initiatives Affecting RC Equipment

The Coast Guard is currently implementing the new Boat Forces Reserve Management Plan (BFRMP), an initiative that better aligns positions with training capacity, including appropriate and sufficient platforms, and will support mobilization readiness for Boat Forces Reservists. The initiative clearly defines readiness requirements, standardizes Reserve personnel allowance lists at boat stations, and introduces new Boat Forces Reserve competencies to ensure Reservists are ready and capable to effectively conduct boat operations in support of USCG missions. The BFRMP is being phased in on a four-year schedule and will be fully implemented in FY 2019.

II. Coast Guard Reserve Overview

A. Current Status of the Coast Guard Reserve

1. General Overview

Top Coast Guard Reserve Equipping Challenges

- Obtaining sufficient training capacity to ensure proficiency on updated platforms
- Maximizing availability of operational platforms for RC training

The Reserve Force provides critical competencies vital to the USCG's capability to lead, manage, and coordinate the Nation's response to acts of terrorism, disasters, or other emergencies in the maritime domain. As an integrated force multiplier, Reserve personnel serve alongside AC members in support of DHS programs and USCG statutory missions. The USCG depends on the Reserve force to be always ready to mobilize with critical competencies in boat operations, contingency planning and response, expeditionary warfare, marine safety, port security, law enforcement and missions support.

The RC is comprised of 7,300 funded billets or positions, which is approximately 20 percent of USCG's total force strength. The USCG Reserve Training Appropriation for FY 2015 provided $114M for necessary expenses as authorized by law, which include operations; administration and maintenance of the Reserve program; personnel and training costs; and services. The Reserve Training Appropriation does not provide funding for personal protective equipment and machinery assets such as boats, vehicles, boat engines, and rescue equipment.

2. Status of Equipment

a. Equipment On-hand

Table 1 Consolidated Major Item Inventory and Requirements identifies the major equipment inventories for FY 2017–FY 2019. The AC procures and accounts for all RC equipment.

The RC uses two main boat platforms, the Transportable Port Security Boat (TPSB) and the Response Boat–Small (RB-S).

Coast Guard PSUs operate the TPSB for defense operations providing waterborne security and port defense operations. The USCG operates a total of 59 Generation IV TPSBs at the PSUs and at the Special Missions Training Center (SMTC) in Camp Lejeune, North Carolina.

The RB-S serves as a mobilization platform for Reservists assigned to USCG stations throughout the Nation. The USCG continues recapitalization of its RB-S fleet with production of the 29′ RB-S II. The RB-S II, designed with an increased emphasis on function and crew comfort, will gradually replace the Defender-class RB-S as the older assets reach the end of their service life. There are 123 RB-S and 232 RB-S II boats operating throughout the USCG. They handle a wide range of Coast Guard missions close to shore, including search and rescue; law enforcement; ports, waterways and coastal security; drug and migrant interdiction; and environmental protection and response.

29' RB-S II

32' TPSB, Generation IV

b. Average Age of Major Items of Equipment

Table 2 Average Age of Equipment provides the projected average age of equipment at the start of FY 2016.

c. Compatibility of Current Equipment with AC

PSUs are primary inshore/harbor surface interdiction response assets that conduct overseas Naval Coastal Warfare missions of harbor defense and port security operations. They may also support domestic Ports, Waterways, and Coastal Security, as well as contingency operations in response to natural disasters and national emergencies. Due to their unique mission requirements, TPSBs are maintained mostly at PSUs. However, SMTC maintains four TPSBs used to fulfill training requirements. The weapons systems and navigation packages are the same as those found in the AC and require periodic maintenance, upgrades, and repairs. TPSB communications systems have capacities beyond those on AC platforms, and are compatible with DOD systems.

All other platforms and equipment used by the RC are shared with the AC.

d. Maintenance Issues

Units maintain an adequate preventative maintenance schedule but, in some cases, aged equipment such as high-mileage vehicles, tents, etc., require replacement, not maintenance. The transition to the Generation IV TPSB was completed in 2014. As such, long-term maintenance requirements resulting from extended use have not been fully realized.

e. Modernization Programs and Shortfalls

The USCG continues to aggressively pursue replacement of its aging boat platforms, weapons, and other equipment. The RC will require additional training to become proficient on the new equipment and maintain operational readiness.

The USCG Small Boat Product Line has achieved full integrated logistics support for the RB-S II and 90 percent integrated logistics support for the TPSB Generation IV boat fleet. Integration is expected to be completed by December 2015.

In FY 2014, PSUs began the transition from .40 caliber pistols and M16A2 rifles to a 9mm pistol and a full complement of M4 variant rifles. The transition to the 9mm pistols is complete and the

M4 rifle transition is expected to be completed in FY 2018. This acquisition enables PSUs to realize efficiencies through existing DOD supply chains and logistical infrastructure.

f. Overall Equipment Readiness

The USCG Reserve has made strides in the PSU community to recapitalize and upgrade major equipment systems; however a high operating tempo over the last fourteen years, in support of both expeditionary and domestic contingencies, has created a need to replace aging and rapidly degrading equipment. Examples include the recapitalization of vehicles approaching end of life cycle, all terrain forklifts, and additional secure communications suites. Additionally, the PSU program is still in the early stages of the TPSB Generation IV life cycle. This acquisition program requires ongoing support to operation and maintenance budgets to ensure operability of the new boat platforms on a routine basis. Maximum availability of operational boats for seamanship and gunnery training is imperative for RC personnel to attain required qualifications, especially considering the minimal number of training days allotted per month/year.

B. Changes since the Last NGRER

The Reserve Training Appropriation was reduced from $120M in FY 2014 to $114M in FY 2015. Appropriation funding decreases negatively impact RC training opportunities to ensure that Reservists can proficiently operate the equipment included in this report.

C. Future Years Program (FY 2017–FY 2019)

1. FY 2019 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2017–FY 2019 inventories and requirements for major equipment. All equipment is procured and accounted for by the AC.

2. Anticipated New Equipment Procurements

The USCG is updating the aging RB-S I fleet with the RB-S II. The 29′ RB-S II is a high-speed platform that handles a wide range of Coast Guard missions close to shore, includi2ng search and rescue; law enforcement; ports, waterways and coastal security; drug and migrant interdiction; and environmental protection and response. By FY 2019, the RB-S II upgrade will be more than 80 percent complete.

3. Anticipated Withdrawals from RC Inventory

None to report.

4. Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2019

Table 1 Consolidated Major Item Inventory and Requirements and *Table 8 Significant Major Item Shortages* provide RC equipment inventories, shortfalls, and modernization requirements.

USCG unit operations and maintenance fund managers include personal protective equipment (PPE) in annual budget requests. In recent years, budget constraints have created a gap between the amount of funding available and the amount required. Funding for PPE is based on a five-year cycle, which provides the unit enough funding to fully outfit each member with

new/serviceable equipment at the end of a five-year period. The five-year cycle was developed in part based on the equipment service life and member assignments or transfers.

The AC provides PPE for both AC and RC personnel using its operation and maintenance funds. The Reserve Training Appropriation does not pay for PPE. Approximately 4,700 filled positions, or 64 percent, of the RC have mobilization requirements that require PPE to safely conduct USCG operations. The annual shortfall in PPE for RC personnel is estimated to be approximately $505K.

Table 6-2 provides the FY 2016 PPE funding shortfall. The absence of PPE funding diminishes Reserve mobilization readiness and the ability to safely train. Reservists must be properly outfitted to safely perform USCG operations to achieve and maintain their mobilization competencies.

Table 6-2. Coast Guard FY 2016 PPE Funding for the RC

Unit / PPE Type	Cost	# of Personnel	Total	Total/Year
Ashore (Reserve) Basic Ensemble (Boat Station)	$1,615	1,853	$2,992,595	$598,519
Ashore (Reserve) Cold Ensemble (Boat Station)	$1,779	1,302	$2,316,258	$463,252
Ashore (Reserve) Basic Ensemble (Aids to Navigation Team)	$1,615	6	$9,690	$1,938
Ashore (Reserve) Cold Ensemble (Aids to Navigation Team)	$1,779	5	$8,895	$1,779
Sector Ops (Reserve) Basic Ensemble	$1,615	681	$1,099,815	$219,963
Sector Ops (Reserve) Cold Ensemble	$1,779	372	$661,788	$132,358
Tactical (Reserve) Basic/Cold Ensemble (PSU)	$3,394	320	$1,086,080	$217,216
PPE per Person Total		4,539	$8,175,121	$1,635,024
Total	$8,175,121			
Total/Year	$1,635,024		Annual Shortfall	
Total Available	$1,130,588		($504,536)	

D. Summary

The USCG depends on the Reserve force to be ready within 72 hours to mobilize with critical competencies in boat operations, contingency planning and response, expeditionary warfare, marine safety, port security, law enforcement, and mission support. The Coast Guard Reserve Component is fully integrated with the Active Component. Both components collaboratively train and jointly conduct day-to-day operations. This ensures Reserve members are properly trained for contingency operations and allows us to augment the Active Component.

Adequate funding to support equipment procurement and maintenance as well as necessary training to operate and maintain the equipment is critical to sustaining an effective operational reserve. The USCGR will continue to be an invaluable force, ready to perform the missions critical to maritime homeland security, national defense (domestic and expeditionary), and domestic disaster operations. Operational integration (augmentation) is critical to maintaining the ability to respond to various contingencies (mobilization) within austere budgetary environments.

USCGR

Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major equipment items. It provides the projected inventory quantity on-hand (QTY O/H) at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) to meet the full wartime requirements of the Reserve Component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment that should be in the inventory of each Reserve Component. FY 2017 unit cost estimates are provided by the Military Departments.

Nomenclature	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
Port Security Units (PSU)						
Installation of AN/PRC-117G Wideband, Multiband, Multi-mission Tactical Boat Radio	$18,750	55	55	55	55	55
Fly Away Kit (Portable Satellite Communications Kit)	$5,329	2	4	4	4	4
AN/PRC-152A Wideband, Handheld, Networking Radio	$15,392	288	288	288	288	288
Power Amplifier RF-7800UL-V150 (1 per PRC-117G radio)	$20,000	32	32	32	32	32
M4-Variant Rifle	$1,100	176	176	1,032	1,032	1,032
SIG P229R DAK 9mm Pistol	$660	528	528	528	528	528
Deployable Medical Officer Kits	$111,000	2	2	2	2	4
Portable Armory	$75,000	8	8	8	8	8
Portable Scales	$9,380	32	32	32	32	32
All Terrain Forklift	$90,000	6	8	8	8	8
Polytetrafluoroethylene 32' Transportable Port Security Boat (TPSB) Covers	$1,200	18	55	55	55	55
Vehicle, F550 Stake-bed (1 per unit)	$56,000	6	6	6	6	8
Vehicle, F450 Pickup (5 per unit)	$46,000	40	40	40	40	40
Vehicle, F350 Pickup (1 per unit)	$45,000	8	8	8	8	8
Generators with Distribution Panel	$500,000	6	6	6	6	6
32' Transportable Port Security Boat (TPSB)	$495,000	55	55	55	55	55
Palm Infrared, Thermal Imager	$9,450	0	0	0	0	16
Utility Trailer (1 per unit)	$7,000	3	3	3	3	8
Searchlight Set	$7,700	0	0	0	0	8
Counter, Frequency (DC to 500HHZCW)	$4,461	8	8	8	8	8
Analyzer, Communication	$4,390	8	8	8	8	8
Computer, Laptop	$4,000	14	16	16	16	16
Fuel Bladder 3K Gallons	$3,885	80	80	80	80	88
Water Buffalo	$162,000	6	6	6	6	6
Forklift	$42,000	8	8	8	8	8
Fuel Containment Boom	$3,395	24	24	24	24	48
Vidmar, Storage Container	$3,246	32	32	32	32	88
Generator Digital Clock Pulse, Synthesizer (Part #98)	$3,286	8	8	8	8	8
Meter, Modulation (AM/FM Carrier Frequency 30 to 100 MHz)	$3,001	8	8	8	8	8
Voltmeter, Analog (5 Hz - 10 MHz, 0 DBM = 1MW/600 OHMS)	$2,977	8	8	8	8	8
Analyser, Distortion (10 Hz-100 KHz)	$2,487	8	8	8	8	8
Unity Triband Radio	$5,000	110	110	110	110	110
Base X Shelter (6D31)	$27,996	112	112	112	112	112
Water Bladder, 2K-gallon capacity	$4,112	0	16	16	16	16

USCGR

Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Unit Cost	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	Begin FY 2019 QTY O/H	End FY 2019 QTY O/H	End FY 2019 QTY REQ
USCG Boat Forces						
Response Boat-Small I (RB-S I)	$186,000	123	98	73	60	60
RB-S II	$330,000	232	257	282	295	295
Mobile Support Units (MSU)						
Trailers, Tools / Equipment	$150,000	1	1	1	1	1
Truck, Stake-bed Class 8 (2 per detachment)	$126,000	2	2	4	2	2
Truck, Stake-bed (2 per detachment)	$65,000	2	2	2	2	2
Generator, 240kW	$120,000	4	4	4	4	4
Forklift, 10,000 lb	$90,000	1	2	2	2	2
Trailer, Administrative Support (1 per detachment)	$86,463	2	2	2	2	2
Trailer, Maintenance Shop	$83,688	7	7	7	7	7
Trailer, Logistic Support Parts (3 per detachment)	$58,462	6	6	6	6	6
Trailer, Open Bulk Storage (2 per detachment)	$49,600	4	4	4	4	4
Truck, Pickup (1 per detachment)	$45,000	2	2	2	2	2
A/C - H/P (Air Rover Units 2 per detachment)	$10,000	4	4	4	4	4
Portable Welding/Cutting Shops (1 per detachment)	$30,000	2	2	2	2	2
Generator, Magnum 25kW	$10,000	4	4	4	4	4
CONEX Boxes, 40' X 8'	$30,000	2	2	2	2	2
CONEX Boxes, 20' X 8'	$12,000	6	6	6	6	6
CONEX Boxes, 8' X 8'	$15,000	2	2	2	2	2
Power Distribution Center	$12,000	4	4	4	4	4
AC&R Repair and Service Kits (1 per detachment)	$10,000	2	2	2	2	2
DC Kit, Compressed Air & GenSet (1 per detachment)	$8,000	2	2	2	2	2
Computer, Laptop	$2,000	2	4	4	4	4
Gator, 6X6 Diesel Terrain Vehicle (1 per detachment)	$6,500	3	3	3	3	3
Generator, Light Tower	$5,716	5	5	5	5	5
Generator, Microsilent 12kW	$3,500	4	4	4	4	4
General Purpose Tents, 18' X 18' (3 per detachment)	$3,000	6	6	6	6	6
Environmental Control Unit (ECU), Drash	$92,131	1	1	1	1	2
Diesel Powered Welder	$3,000	1	1	1	1	1
Special Missions Training Center (SMTC)						
32' Transportable Port Security Boat	$495,000	4	4	4	4	4
Environmental Control Unit (ECU), HP-2C/338 IPT	$130,497	4	4	4	4	4
Base X Shelter (6D31)	$27,966	1	1	1	1	1
Base X Shelter (505)	$24,190	1	1	1	1	1
Base X Shelter (307)	$18,445	4	4	4	4	4
Base X Shelter (305)	$13,008	8	8	8	8	8
Base X Shelter (203)	$8,392	3	3	3	3	3
Trailer, Tank	$12,955	2	2	2	2	2
ISU 90 Shipping Container	$8,600	1	1	1	1	1
* The AC manages all equipment for the Coast Guard Total Force.						

USCGR

Table 2

Average Age of Equipment

NOTE: This table provides the average age of selected major equipment items. The average age provides a projected average age of the fleet at the start of FY 2016.

Nomenclature	Average Age	Remarks
Port Security Units (PSU)		
32' Transportable Port Security Boat (TPSB)	4	
Radio Set AN/PRC-117G	2	
AN/PRC-152A Wideband, Handheld, Networking Radio	4	
Radio, VHF Motorola XTL-5000 Mobile	10	
Portable Armory	4	
All Terrain Forklift	1	
All Terrain Vehicle, Gator (1 per unit)	2	
Vehicle, F550 Stake-bed (1 per unit)	10	
Vehicle, F450 Pickup (5 per unit)	4	
Vehicle, F350 Pickup	4	
Generator 5kW (2 per unit)	4	
Generator 15kW	9	
Generator 5kW (2 per unit)	4	
Generators with Distribution Panel	4	
Generator, Signal Synthesizer, Frequency, MG3641N (500 KHz to 1024 MHz AM/FM)	7	
Generator Digital Clock Pulse, Synthesizer (Part #98)	4	
Utility Trailer (1 per unit)	11	
Counter, Frequency (DC to 500HHZCW)	12	
Analyzer, Communication	10	
Fuel Bladder 3K Gallon	10	
Fuel Containment Boom	4	
Tents	4	
Water Buffalo (1 per unit)	10	
Meter, Modulation (AM/FM Carrier Frequency 30 to 100 MHz)	10	
Voltmeter, Analog (5 Hz to 10 MHz)	10	
Analyzer, Distortion (10 Hz-100 KHz)	9	
Base X Shelters (14 per PSU)	4	
USCG Boat Forces		
Response Boat Small I (RB-S I)	10	
RB-S II	2	
Mobile Support Units (MSU)		
Truck, Stake-bed Class 8	4	
Truck, Stake-bed	12	
Truck, Pickup	11	
Gator, 6X6 Diesel Terrain Vehicle	9	
Generator, 240kW	9	
Generator, Light Tower	9	

USCGR
Average Age of Equipment

Table 2

Nomenclature	Average Age	Remarks
Generator, Magnum 25kW	10	
Generator, Microsilent 12kW	12	
Forklift, 10,000 lb	12	
Trailers, Tools / Equipment	8	
Trailer, Administrative Support	8	
Trailer, Logistic Support Parts	8	
Trailer, Maintenance Shop	8	
Trailer, Open Bulk Storage	8	
Computer, Laptop	2	
A/C - H/P (Air Rover Units)	9	
Portable Welding/Cutting Shops	9	
CONEX Boxes, 40' X 8'	17	
CONEX Boxes, 20' X 8'	9	
CONEX Boxes, 8' X 8'	12	
Power Distribution Center	5	
AC&R Repair and Service Kits	7	
DC Kit, Compressed Air & GenSet	8	
General Purpose Tents, 18' X 18'	9	
Diesel Powered Welder	9	
Environmental Control Unit (ECU), HP4-DL	11	
Base X Shelter (6D31) Command	11	
Base X Shelter (505) Maintenance	11	
Drash Shelter (6S)	11	
Drash Shelter (2S)	11	
Special Missions Training Center (SMTC)		
32' Transportable Port Security Boat (TPSB)	4	
Environmental Control Unit (ECU), HP-2C/338 IPT	3	
Base X Shelter (6D31)	8	
Base X Shelter (505)	8	
Base X Shelter (307)	8	
Base X Shelter (305)	8	
Base X Shelter (203)	8	
Trailer, Tank	14	
ISU 90 Shipping Container	17	

USCGR

Service Procurement Program - Reserve (P-1R)

NOTE: This table identifies the dollar value of programmed equipment procurement as identified in the P-1R exhibit of the FY 2017 President's Budget Request. All values are costs in dollars and exclude ammunition procurements. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2017 are expected to arrive in RC inventories in FY 2018 or FY 2019.

Nomenclature	FY 2017	FY 2018	FY 2019

Table 3 not applicable for USCGR

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar value of planned equipment procurements with the National Guard and Reserve Equipment Appropriation (NGREA). These funds are available for a three-year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory; e.g., items procured in FY 2016 would be expected to arrive in RC inventories in FY 2017 or FY 2018. All values are costs in dollars.

Nomenclature	FY 2014	FY 2015	FY 2016

Table 4 not applicable for USCGR

USCGR

Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment," or equipment that is provided to the RC once the AC receives more modern equipment. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Nomenclature	Equip No.	FY 2017 Qty	FY 2018 Qty	FY 2019 Qty	Remarks

Service has no planned transfers or withdrawals for the years FY 2017 thru FY 2019.

USCGR

Table 6

FY 2013 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2013 with actual procurements and transfers. FY 2013 is selected as these are the most recent funds to expire. Because the procurement cycle is normally one to two years from funding to delivery, this table identifies only deliveries through the end of FY 2015. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2013 Transfers (# of items)		FY 2013 Procurements ($s)		FY 2013 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual

USCGR had no planned or actual transfers or procurements of major equipment during FY 2013

USCGR

Table 7

Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is deployable in wartime. This data meets the Title 10 requirement to identify substitutes that are not the most desired equipment item.

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2017 Qty	Deployable?	
					Yes	No

Service Does Not Use Substitution to Satisfy Major Item Equipment Requirements

USCGR

Table 8

Significant Major Item Shortages

NOTE: This table provides a RC prioritized (PR) shortage list for major equipment items required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded equipment data submitted by the Service.

PR	Nomenclature	Total Req'd	# Items[1] Short	Item Cost	Total Shortage Cost	Rationale/Justification
1	Vehicle, F550 Stake-bed	8	2	$56,000	$112,000	One required per Port Security Unit (PSU) for a total of eight. PSUs require a vehicle capable of towing a Transportable Port Security Boat (TPSB) and moving large equipment such as an ISU 90 container. Current vehicles are approaching end of life cycle and require recapitalization. Diesel fuel required for use outside the continental United States.
2	Deployable Medical Officer Kits	4	2	$111,000	$222,000	The medical officer kit allows PSUs to maintain self sustainability in a vulnerable joint security area where medical transportation for treatment by a Coast Guard medical officer incurs additional safety and security risks.
3	Drash Environmental Control Unit	2	1	$92,131	$92,131	Mobile Support Unit (MSU) requirement for contingency operations.
4	Utility Trailer	8	5	$7,000	$35,000	Requirement for moving heavy equipment.
5	Palm Infrared, Thermal Imager	16	16	$9,450	$151,200	Needed for PSU Shoreside Security Divisions to maintain perimeter security and entry control points for life support areas (base camps).
6	Searchlight Set	8	8	$7,700	$61,600	Required by PSUs to conduct nighttime security operations.
7	Fuel Containment Boom	48	24	$3,395	$81,480	Required by PSUs for containment of possible spills.
8	Fuel Bladder, 3K Gallon	88	8	$3,885	$31,080	Required for PSU mobile fuel storage.
9	Storage Container, Vidmar	88	56	$3,246	$181,776	Required for equipment and parts storage.

1. Shortage items are required for AC recapitalization of outdated equipment. The AC manages all equipment for the Coast Guard Total Force.

Appendix A
Report Requirements, Terminology, and Definitions

I. Report Requirements

A. Overview of Statutory Requirement

The DOD Authorization Act of 1982 (Public Law 97-86), as amended, established the requirement for DOD to provide an annual report to the Congress, by March 15th of each year, on the status of National Guard and Reserve equipment; hereafter referred to as the NGRER. The Goldwater-Nichols DOD Reorganization Act of 1986 amended Title 10 of the United States Code (U.S.C.) placing the reporting requirement under Section 115(b). The Congress in Public Law 103-337 transferred reporting requirements to a new Subtitle E, Reserve Components, Part I, Chapter 1013, which was redesignated Section 10541. In compliance with the FY 1993 National Defense Authorization Act (NDAA), Section 1134, Title XI, the NGRER was expanded to include a description of the current status of equipment incompatibility between the Active Component (AC) and Reserve Component (RC), the effect of that level of incompatibility, and the plan to achieve full compatibility. Finally, the FY 2008 NDAA, Sections 351(a), 351(c)(1), and 1826 added additional National Guard equipment reporting requirements to the NGRER. Sections 351(a) and 351(c)(1) added the requirement for an assessment of the extent to which the National Guard possesses the equipment required to suppress insurrections (10 U.S.C. §§ 331–333), provide assistance in cases of weapons of mass destruction or terrorist attacks (10 U.S.C. § 12304(b)), or to repel invasions, suppress rebellions, or execute the laws of the United States (10 U.S.C. § 12406) in an emergency or major disaster. Section 1826 required a statement of the accuracy of past National Guard equipment inventory projections, and a certification from the Chief of the National Guard Bureau setting forth the inventory of equipment items that were due to be procured in the preceding fiscal year, but were not received.

This report is prepared by the Office of the Assistant Secretary of Defense for Readiness with the assistance of the Department of the Army, the Department of the Navy, the Department of the Air Force, and the Department of Homeland Security (United States Coast Guard).

B. Current Law

The section below is an excerpt from Section 10541, Title 10, U.S.C. Changes required by the FY 2008 NDAA are highlighted.

National Guard and Reserve Component Equipment: Annual Report to Congress

(a) The Secretary of Defense shall submit to the Congress each year, not later than March 15, a written report concerning the equipment of the National Guard and the reserve components of the armed forces for each of the three succeeding fiscal years.

(b) Each report under this section shall include the following:

(1) Recommendations as to the type and quantity of each major item of equipment which should be in the inventory of the Selected Reserve of the Ready Reserve of each reserve component of the armed forces.

(2) A statement of the quantity and average age of each type of major item of equipment which is expected to be physically available in the inventory of the Selected Reserve of the Ready Reserve of each reserve component as of the beginning of each fiscal year covered by the report.

(3) A statement of the quantity and cost of each type of major item of equipment which is expected to be procured for the Selective Reserve of the Ready Reserve of each reserve component from commercial sources or to be transferred to each such Selected Reserve from the active-duty components of the armed forces.

(4) A statement of the quantity of each type of major item of equipment which is expected to be retired, decommissioned, transferred, or otherwise removed from the physical inventory of the Selected Reserve of the Ready Reserve of each reserve component and the plans for replacement of that equipment.

(5) A listing of each major item of equipment required by the Selected Reserve of the Ready Reserve of each reserve component indicating -

(A) the full war-time requirement of that component for that item, shown in accordance with deployment schedules and requirements over successive 30-day periods following mobilization;

(B) the number of each such item in the inventory of the component;

(C) a separate listing of each such item in the inventory that is a deployable item and is not the most desired item;

(D) the number of each such item projected to be in the inventory at the end of the third succeeding fiscal year; and

(E) the number of non-deployable items in the inventory as a substitute for a required major item of equipment.

(6) A narrative explanation of the plan of the Secretary concerned to provide equipment needed to fill the war-time requirement for each major item of equipment to all units of the Selected Reserve, including an explanation of the plan to equip units of the Selected Reserve that are short of major items of equipment at the outset of war.

(7) For each item of major equipment reported under paragraph (3) in a report for one of the three previous years under this section as an item expected to be procured for the Selected Reserve or to be transferred to the Selected Reserve, the quantity of such equipment actually procured for or transferred to the Selected Reserve.

(8) A statement of the current status of the compatibility of equipment between the Army reserve components and active forces of the Army, the effect of that level of incompatibility on combat effectiveness, and a plan to achieve full equipment compatibility.

(9) (Added by FY 2008 NDAA, Sections 351(a) and 351(c)(1)) An assessment of the extent to which the National Guard possesses the equipment required to perform the responsibilities of the National Guard pursuant to sections 331, 332, 333, 12304(b) and 12406 of this title in response to an emergency or major disaster (as such terms are defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122)). Such assessment shall–

(A) identify any shortfall in equipment provided to the National Guard by the Department of Defense throughout the United States and the territories and possessions of the United States that is likely to affect the ability of the National Guard to perform such responsibilities;

(B) evaluate the effect of any shortfall on the capacity of the National Guard to perform such responsibilities in response to an emergency or major disaster that occurs in the United States or a territory or possession of the United States; and

(C) identify the requirements and investment strategies for equipment provided to the National Guard by the Department of Defense that are necessary to plan for a reduction or elimination of any such shortfall.

(c) Each report under this section shall be expressed in the same format and with the same level of detail as the information presented in the annual Future Years Defense Program Procurement Annex prepared by the Department of Defense.

(d) (Added by FY 2008 NDAA, Section 1826) Each report under this section concerning equipment of the National Guard shall also include the following:

(1) A statement of the accuracy of the projections required by subsection (b)(5)(D) contained in earlier reports under this section, and an explanation, if the projection was not met, of why the projection was not met.

(2) A certification from the Chief of the National Guard Bureau setting forth an inventory for the preceding fiscal year of each item of equipment–

(A) for which funds were appropriated;

(B) which was due to be procured for the National Guard during that fiscal year; and

(C) which has not been received by a National Guard unit as of the close of that fiscal year.

II. Report Objective

Based upon the law, the Office of the Assistant Secretary of Defense for Readiness (Readiness Programming and Resources), with concurrence from all Services, has identified the following objectives:

- Provide the Services' plan to equip their Reserve forces in a time of constrained DOD budgets.
- Concentrate on FY 2017–FY 2019 RC requirements, procurements and changes.
- Provide an overview of current RC equipment from three perspectives:
  - current status of equipment on-hand.
  - future year equipment procurements for FY 2017–FY 2019
  - remaining shortfall for FY 2019 and beyond.
- Focus primarily on major items of equipment.

III. Report Contents

A. Overview (Chapter 1)

Chapter 1 presents a composite DOD perspective on National Guard and Reserve equipment and serves as the executive summary of the report.

B. Service Narratives and Data Tables (Chapters 2–6)

Chapters 2 through 6 present the status of each Service and their respective RC in terms of RC equipping policies and methodologies. Each chapter contains a Service and RC overview, and includes a discussion of current equipment status, future equipment procurements, and remaining shortfalls and unfunded requirements. Each chapter includes a review of the current status of equipment compatibility and interoperability between the AC and the RC of each Service, the effect of that level of compatibility/interoperability, and a plan to achieve full compatibility/interoperability.

RC data tables for each Service contain specific information on major items of equipment selected for review in this report and are placed at the end of each RC narrative section. The NGRER articulates data in eight tables (*Tables 1-8*) for each RC. In a situation where data tables are not applicable to a particular RC, a blank page has been inserted to note that table data is not applicable. The "Data Table Explanation" at the end of this section defines the data contained in *Tables 1-8*.

IV. Terminology and Definitions

Major Items of Equipment include aircraft, tanks, ships, trucks, engineer equipment and major items of support equipment. These items normally will include large dollar value requirements, critical RC shortages, Service and National Guard and Reserve Equipment Appropriation (NGREA) procured items, and any RC specific item which the Chief of the specific RC wishes to highlight.

Required Quantity is the total number of an item required to be on-hand or available to RC units to go to war and accomplish their missions. This includes requirements for war reserve and other stocks. The simplified term "requirement," as used in this report, is synonymous with "full wartime requirement," and satisfies the requirement in Title 10 to provide a "recommendation" as to the type and quantity of equipment needed in RC inventories.

On-hand Quantity is the equipment physically on-hand in RC or AC units or in war reserve and other stocks specifically designed for wartime use by the RC or AC.

Deployable Item is an item which, considering its suitability, operability, compatibility and supportability, will provide an expected degree of mission success sufficient to warrant its wartime operational employment.

Compatibility/Interoperability denotes the capability of two items of equipment to operate together in the same environment without interfering with one another and without degrading function or unit capability.

Substitute Item is not the most desired item but based upon its capability can be employed in wartime in lieu of a combat essential required item of equipment. It may not function at the same level of capability as the item in the AC for which it is the substitute.

Equipment Shortage (Shortfall) is the difference between the quantity required and the quantity on-hand, excluding substitute items and excess quantities beyond the required quantity.

Modernization Shortfall is the difference between the required quantity of the most modern item and the on-hand quantity of that item. Modernization shortfalls are not necessarily equipment shortages as most Services substitute older versions of an item for the most modern item. Therefore, modernization shortfalls are shortages of the most modern item only, and can have a significant effect upon compatibility and interoperability.

V. Data Tables

A. Table Contents

A separate set of Data Tables (*Tables 1-8*) is provided in Chapters 2 through 6 for each RC. These tables contain the required information relative to major items of equipment identified in the report. The following list identifies the separate data tables that are included in the report for each RC.

- Table 1: Consolidated Major Item Inventory and Requirements (This is an all-inclusive table while other tables are subsets of *Table 1*.)
- Table 2: Average Age of Equipment
- Table 3: Service Procurement Program - Reserve (P-1R)
- Table 4: National Guard and Reserve Equipment Appropriation (NGREA) Procurements
- Table 5: Projected Equipment Transfer/Withdrawal Quantities
- Table 6: FY 2013 Planned vs Actual Procurements and Transfers
- Table 7: Major Item of Equipment Substitution List
- Table 8: Significant Major Item Shortages

B. Table Explanations

The following paragraphs provide an explanation of the data table columns and data criteria by Table.

Table 1: Consolidated Major Item Inventory and Requirements. This table provides a comprehensive list of selected major items of equipment the RC chooses to highlight, by providing key administrative data, on-hand inventories and wartime requirements.

RC is the specific Reserve or National Guard entity, i.e., ARNG, USAR, USMCR, ANG, AFR, USNR, or USCGR.

Nomenclature is the description or common name of the item of equipment.

Equipment Number is the individual Service equipment identification code: Line Item Number for the Army; Table of Authorized Materiel Control Number for the Marine Corps; Equipment Cost Code for Navy engineering items; and National Stock Number for the Air Force.

Cost is the FY 2017 procurement cost per unit. If an item is no longer being procured, the inflation adjusted cost from the last procurement is shown. If an item is programmed for initial procurement beyond FY 2017, the data table depicts the projected unit cost at the time of procurement.

Quantity On-hand (QTY O/H) is the actual/projected item count for a particular item of equipment at a specified time.

Quantity Required (QTY REQ) is the authorized wartime requirement for a given item of equipment.

Table 2: Average Age of Equipment. This table is a subset of *Table 1* and highlights the average age of selected items of equipment.

Average Age is the calculated age of a given item of equipment. Since equipment is normally procured over several years, this figure provides an average age of the fleet at the start of FY 2016.

Table 3: Service Procurement Program - Reserve (P-1R). This table highlights items of equipment, which the Service intends to procure for their RC. The source of this data is the P-1R exhibit to the President's Budget.

Table 4: National Guard and Reserve Equipment Appropriation (NGREA) Procurements. This table highlights the items, which the RC plan on procuring with miscellaneous NGREA funds. Since these funds are available for three years, this table highlights those items in the current procurement cycle.

Table 5: Projected Equipment Transfer/Withdrawal Quantities. This table portrays the planned equipment transfers (AC to RC), withdrawals, and decommissioning. Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the AC receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution due to the uncertainty of the procurement/delivery cycle of new equipment.

Table 6: FY 2013 Planned vs Actual Procurements and Transfers. This table compares what the Service planned to procure and transfer to the RC in FY 2013 with actual procurements and transfers. Since the procurement cycle is normally one to three years from funding to delivery, this table identifies only what has been delivered through the end of FY 2015.

Planned Quantity is the item quantity the Service programmed to deliver to the RC as part of the budgeting process.

Actual Quantity is the item quantity the Service actually delivered or has in the procurement cycle to deliver to the RC.

Table 7: Major Item of Equipment Substitution List. A list of equipment authorized by the Service to be used as a substitute for a primary item of equipment. This table also identifies whether this substitute item is suitable for deployment in time of war.

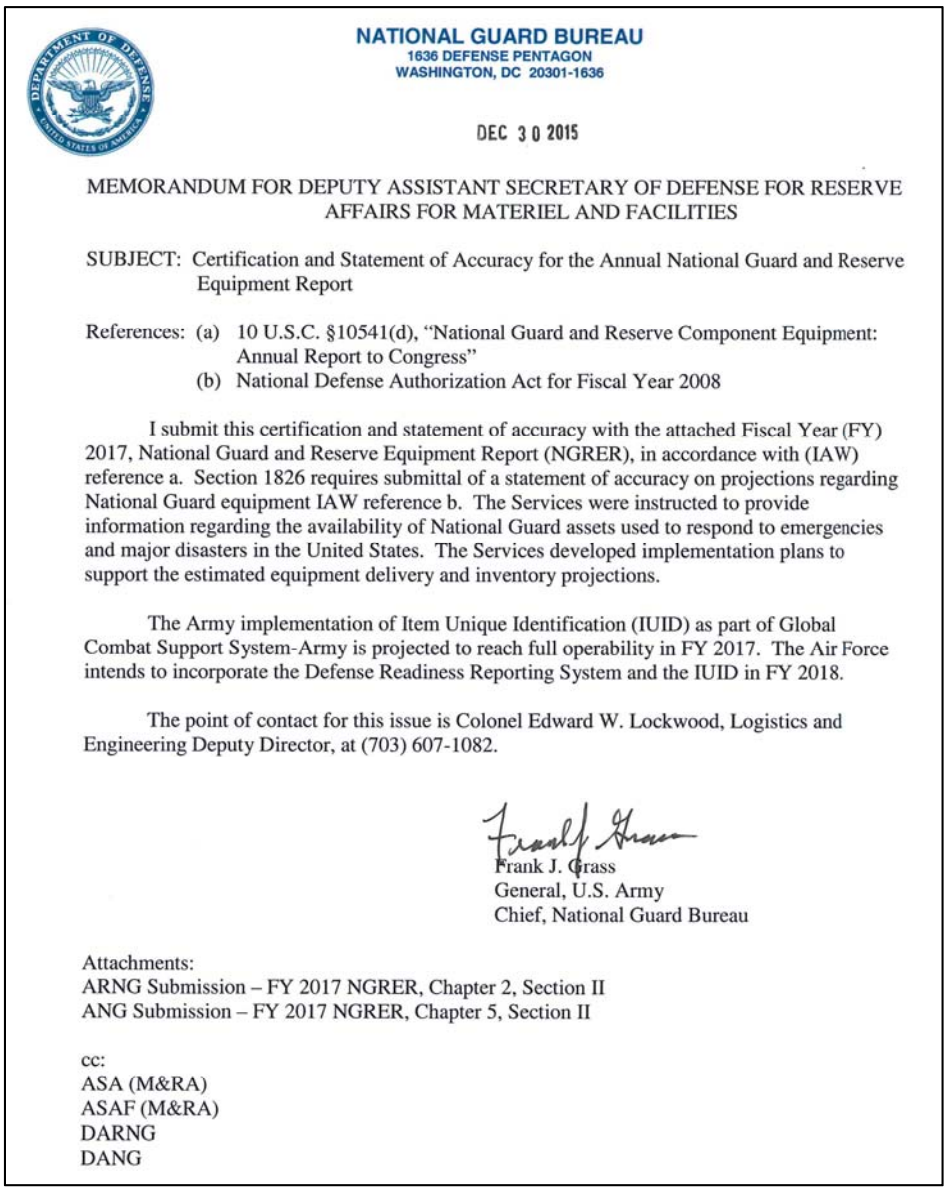
Nomenclature (Required Item/Substitute Item), see *Table 1* description for nomenclature.
Equipment Number (Required Item/Substitute Item), see *Table 1* description for equipment number.

Table 8: Significant Major Item Shortages. The top ten items of equipment and modernization/upgrades, which are not funded in the FY 2017–FY 2019 Future Years Defense Program, are listed in this table in priority order. If additional funds were to become available, the RC would apply those funds to the highest priority item on this list.

Appendix B
National Guard Equipment Reporting Requirements

This appendix provides the DOD response to the requirement, in accordance with section 10541(b)(9) of title 10, United States Code (U.S.C.), for an assessment of the extent to which the National Guard possesses equipment necessary to perform certain specified Federal missions in response to an emergency or major disaster in the United States (Section I), and the requirement, in accordance with section 10541(d) of title 10, U.S.C., to provide a statement of accuracy on projections and a certification by the Chief, National Guard Bureau (CNGB) regarding National Guard equipment (Section II).

Figure B-1. Chief, National Guard Bureau Memorandum



NATIONAL GUARD BUREAU
1636 DEFENSE PENTAGON
WASHINGTON, DC 20301-1636

DEC 30 2015

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR RESERVE AFFAIRS FOR MATERIEL AND FACILITIES

SUBJECT: Certification and Statement of Accuracy for the Annual National Guard and Reserve Equipment Report

References: (a) 10 U.S.C. §10541(d), "National Guard and Reserve Component Equipment: Annual Report to Congress"
(b) National Defense Authorization Act for Fiscal Year 2008

I submit this certification and statement of accuracy with the attached Fiscal Year (FY) 2017, National Guard and Reserve Equipment Report (NGRER), in accordance with (IAW) reference a. Section 1826 requires submittal of a statement of accuracy on projections regarding National Guard equipment IAW reference b. The Services were instructed to provide information regarding the availability of National Guard assets used to respond to emergencies and major disasters in the United States. The Services developed implementation plans to support the estimated equipment delivery and inventory projections.

The Army implementation of Item Unique Identification (IUID) as part of Global Combat Support System-Army is projected to reach full operability in FY 2017. The Air Force intends to incorporate the Defense Readiness Reporting System and the IUID in FY 2018.

The point of contact for this issue is Colonel Edward W. Lockwood, Logistics and Engineering Deputy Director, at (703) 607-1082.

Frank J. Grass
General, U.S. Army
Chief, National Guard Bureau

Attachments:
ARNG Submission – FY 2017 NGRER, Chapter 2, Section II
ANG Submission – FY 2017 NGRER, Chapter 5, Section II

cc:
ASA (M&RA)
ASAF (M&RA)
DARNG
DANG

I. National Guard Overview

"Since the colonial era, the National Guard has had a special role as the original homeland defense (HD) force. In addition, we provide civil support at the federal, state, and local level. This support comes in the form of defense support of civil authorities (DSCA) as well as National Guard Civil Support. Using our unique array of authorities, the Guard responds to the needs of the Nation and States. The inherent flexibility to operate on a continuum from local through state to federal level is one of the foundational strengths of the National Guard."[1]

Continued investment in the operational readiness of the National Guard by the Services and Congress is critical because it allows rapid, cost-effective, and seamless expansion of Active Component (AC) forces. Sustaining all of the advantages of today's National Guard into the future requires maintaining this high state of readiness through operational use, relevant training, and continued investment in modernization and force structure.

"When man-made or natural disasters impact the United States, our military community offers support to civil authorities in concert with other U.S. agencies. As part of that effort, we integrate military and civil capabilities through FEMA's [Federal Emergency Management Agency] National Planning System and National Exercise Program. During domestic events, U.S. military forces---including National Guard and Reserve units---provide trained personnel, communications capabilities, lift and logistical and planning support. They work alongside civilian first-responders to mitigate the impact of such incidents and keep our citizens safe."[2]

A. National Guard Readiness for Emergencies and Major Disasters in the United States

"Army and Air National Guard units are designed for combat. Our units and wings have the structure, equipment, and training to function independently anywhere in the world. The combat skills and equipment that enable a brigade combat team or flying squadron to mobilize and succeed in Afghanistan also enable them to respond to a natural disaster in the United States. From trucks and airplanes to radios and medical tents, our resources are ready for conflict overseas and missions here at home. No other force in the Nation is able to rapidly provide military equipment and capabilities during a domestic emergency like the National Guard. The vast majority of our equipment is available to state governors for use in saving lives and property when not supporting federal missions."[3]

B. Army National Guard Equipment

The Army National Guard Dashboard (see Figure B-2), updated every six months, provides a snapshot of ARNG equipment on-hand (EOH) percentages, the status of Critical Dual Use (CDU) items across the Essential 10 Capability areas, projected equipment fielding in the following two years, and the status of equipment modernization.

As of June 2015, the Army National Guard (ARNG) had 92 percent of Modified Table of Organization and Equipment (MTOE) required equipment and 92 percent of CDU equipment

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[1] *Chief, National Guard Bureau Strategic Direction to the National Guard*, May 23, 2013, p. 8.
[2] *2015 National Military Strategy*, June 2015, p. 12.
[3] *2015 National Guard Posture Statement*, p. 32.

with 89 and 90 percent available for domestic operations respectively to the governors. The primary reasons a piece of equipment is not available to a governor is that it is either in transit or is currently being used on a Title 10 mission such as a mobilization.

Equipment on-hand percentages will fluctuate due to force structure changes, but should only be minor since equipment on-hand is aggregated at the state and national levels.

Figure B-2. Army National Guard Dashboard, June 2015

Army National Guard Dashboard
June 2015

Equipment On-hand

Overall MTOE Equipment:	**92%**
Overall CDU MTOE Equipment:	**92%**
Current Equipment Available for Domestic Operations	
MTOE	**89%**
Critical Dual Use Equipment - MTOE	**90%**

Projected ARNG MTOE EOH Dec 2016 92%
Projected ARNG MTOE Critical Dual Use EOH Dec 2016 92%

Current Status of Critical Dual Use Equipment

E-10	MTOE EOH	MTOE AVAIL
Aviation	93%	89%
CBRN	96%	88%
Cmd & Control	57%	56%
Engineering	90%	90%
Logistics	90%	89%
Maintenance	92%	91%
Medical	99%	97%
Security	99%	96%
Communications	92%	91%
Transportation	98%	97%

CDU FY 14-15 List

Equipment deliveries Mar 2015 - Dec 2016 are 53.5K pieces, including:

Category	Sum of Quantity
Air Defense	52
Aviation	127
Combat Service Support	18
Command and Control	34
Fire Support	565
Intelligence and Electronic Warfare	386
Maneuver	46
Medical	8,964
Mobility	1,408
Nuclear Biological and Chemical	2,155
Other	636
Soldier	37,246
Transportation	1,905

Modernized Equipment On-Hand vs Requirements

Category	Modern PCT	NOT Modern PCT	Total OH
Air Defense	88%	0%	88%
Aircraft	66%	0%	66%
Battle Command	75%	2%	77%
CBT Mobility	77%	0%	77%
CBT Vehicle & Strike	92%	0%	92%
Field Log	88%	0%	88%
Force Protection	98%	0%	98%
Medical Field Systems	86%	0%	86%
Other	77%	0%	77%
Soldier Systems/Weapons	96%	0%	96%
Trucks	90%	8%	98%
National Total OH	**91%**	**1%**	**92%**

Basis of Projections - O/H Inventory: 15MAY15;
Requirements: FY15 MTOE requirements from Dec 2013 SACS File;
Distributions: Mar 15 – Dec 16.
POC: LTC Jim Theut, 703-607-9073 ARNG-RMQ.

Equipping Posture Updated Semiannually
Current Status - O/H Inventory: 15MAY15 includes substitutes and modernized replacement
Modern Equipment is Mod Level >= Mod Level Cut in SECOP from AE2S Apr 15 LINS
Requirements: Dec 2013 SACS File.
POC: LTC Edward Brown, 703-607-7475 ARNG-ILS

1

1. ARNG Equipment Shortfalls

Efforts by Congress to modernize the Total Army have resulted in dramatic increases to modernized EOH across all Army components and have brought the ARNG equipment more in line with the AC inventory. This is critical to ensuring interoperability among all three components and to meeting the Secretary of the Army and Chief of Staff of the Army's strategic vision of obtaining and utilizing the "right mix" of AC and Reserve Component (RC) units to conduct Federal missions.

The most important shortfalls that are affecting ARNG capability to respond to disasters and emergencies are Aviation, Communications, Command and Control, and Engineering.

The Army defines equipment modernization as the procurement or modification of “a piece of equipment (component, subsystem, system) to fill a capability gap or replace it due to obsolescence. Continuous or incremental modernization allows us to fill capability gaps through the indefinite service life of our platforms.”[4]

The Army recognizes the need to identify modernized on-hand equipment that is deployable to combat operations. Without differentiating deployable equipment the ARNG modernization levels would appear higher because while the ARNG may have the right quantity of equipment, they may not have the right quality of equipment.

The Army's tiered modernization system delineates "Modern” equipment and "Most Modern” equipment and then aggregates into a single "modern equipment" level for wartime requirements.

Based on June 2015 data, the projected ARNG EOH percentage for end of FY 2015 is 92 percent. This percentage reflects the Army’s potential “go-to-war” levels, meaning this equipment will be available for use in combat anywhere in the world. Not all of this “go-to-war” equipment is considered the most modern and capable equipment the Army has and thus increases risk to soldiers using it.

The Modernized Equipment On-Hand (MEOH) is used to measure the Army’s modernization progress. MEOH excludes older substitutes and shows the modern inventory against requirements. Using the MEOH methodology, the projected FY 2015 MEOH percentage for the ARNG is 91 percent. The MEOH allows the Army to measure the equipping quality of the force over time at the aggregate and component levels.

The MEOH versus Requirements table provided in the ARNG Dashboard identifies capabilities required by the ARNG for modernization and filling equipment shortfalls in support of Federal and state missions. The list includes 11 categories (in alphabetical order) that contain CDU equipment that the ARNG continues to focus filling equipment shortages and modernization efforts. The table identifies ARNG category areas that should be given additional special attention. These areas with lower MEOH and EOH percentages include Aircraft, Battle Command, and Combat (CBT) Mobility.

2. Effects of ARNG Shortfalls

The ARNG of 2015 is manned, trained, equipped, and experienced at historically high levels of readiness. This is a direct result of the resourcing and legal authorities that Congress has dedicated to this purpose over the past fourteen years. As an operational force, the ARNG is resourced, trained, ready, and utilized on a continual basis, conducting the full spectrum of military operations in all environments as part of the Total Force.

The equipping modernization and interoperability efforts are key priorities in the ARNG’s Equipping Strategy. The modernization methodology may result in the Army calling a piece of

[4] *Army Equipment Modernization Strategy*, March 4, 2013, p. 10.

equipment modern when it does not meet their definition of modernized equipment. There is a resultant direct effect on equipment shortfall estimates.

The risk that the ARNG will be unable to meet mission requirements increases if the role of the ARNG as an operational force and as the combat reserve of the Army is reduced allowing the Army's unprecedented modernization of the ARNG to diminish.

3. ARNG Investment Strategies

The cumulative effect of sequestration will challenge the Army to consistently and predictably provide equipment to the RC. Currently, the ARNG is programmed to receive approximately $7.02B in FY 2017–FY 2019 in future year's base funding (an overall increase from previous years); these figures include $2.23B in FY 2017, $2.39B in FY 2018, and $2.40B in FY 2019. These figures include the Army equipment procurement appropriation accounts, do not include pay and allowance or research and development, and are subject to change with the FY 2017 President's Budget submission. The foremost risk to equipping is the continued equipping resources by Congress to ensure equipment modernization, recapitalization, reset, and repair requirements. Appropriations and obligations must be sustained to maintain required equipping readiness to assure victory in future conflicts.

C. Air National Guard Equipment

This year, the Air National Guard (ANG) focused significant effort to improve the overall state of equipment readiness to respond to emergencies and major disasters in support of civil authorities. The 2015 Domestic Capabilities Priorities conference focused on core ANG Domestic Operations (DOMOPS) capability shortfalls in support of the CNGB's Joint Capability Assessment and Development Process (JCADP). The JCADP is a method for surveying, validating, and prioritizing capability shortfalls and gaps, as well as proposing solutions to mitigate shortfalls and gaps. ANG continues its efforts to recapitalize and modernize its support equipment and vehicles to meet both national defense and DOMOPS requirements. As with 2014, there was a reduction in 2015 to authorized equipment due to Federal mission changes and associations causing an overall drop of 10,622 items from various Essential 10 Capabilities. Currently, the ANG has 94 percent (354,432 pieces) of authorized support equipment and vehicles on-hand within the categories of the Essential 10 Capabilities (see Table B-1).

Table B-1. ANG Support Equipment (SE) and Vehicles

Capability	Auth Qty	In-use Qty	Fill Rate	Auth Cost ($M)	In-use Cost ($M)	Needed Qty	Needed Cost ($M)
Aviation/Airlift	56,753	56,314	99%	$4,198.7	$3,674.2	439	$524.6
CBRN (Chemical, Biological, Radiological, and Nuclear)	2,788	2,581	93%	$906.4	$839.1	207	$67.3
Command & Control	9,492	8,186	86%	$593.8	$589.9	1,306	$3.9
Communications	5,414	5,266	97%	$46.3	$30.7	148	$15.6
Engineering	23,552	23,345	99%	$211.1	$170.7	207	$40.4
Logistics	98,740	79,886	81%	$83.1	$68.4	18,854	$14.8
Maintenance	97,315	95,230	98%	$2,347.4	$1,965.6	2,085	$381.8
Medical	7,046	8,406	119%	$3.3	$2.7	0	$0.0
Security	61,608	60,465	98%	$130.6	$114.4	1,143	$16.2
Total Support Equipment (SE)	362,708	339,679	94%	$8,520.8	$7,455.7	24,389	$1,064.5
Transportation (Vehicles)	16,205	14,753	91%	$1,326.4	$952.9	1,452	$373.5
Total SE & Vehicles	378,913	354,432	94%	$9,847.2	$8,408.6	25,841	$1,438.0

* Data as of August 2015

Currently, 2.5 percent of ANG equipment is deployed in support of overseas contingencies.

1. ANG Equipment Shortfalls

A more detailed review of the ANG equipment health is described in the following four categories of the Essential 10 capabilities.

a. Logistics

The overall ANG logistics fill-rate remains identical to last year at 81 percent. The logistics function encompasses those capabilities necessary for the timely and efficient delivery of supplies, equipment, services, and facilities. One such capability shortfall is remotely piloted aircraft (RPA) operations. The ability of RPA to provide persistent infrared, daytime television, low-light television, and full-motion video to first responders and incident command posts is critical to the ANG's execution of DOMOPS. One such operation is fighting wildfires. Lessons learned from Operation Ardent Sentry in 2012, Operation Angel Thunder in 2013, California ANG's Operation Rimfire in 2013, National Guard (NG) support of the California Department of Forestry and Fire Protection in August 2015, and firefighting efforts in Yosemite National Park revealed quicker responsiveness and longer visibility of the incident location would further enhance this capability. The ability to fly RPAs from deployed locations rather than home station increases mission time over the incident instead of traveling to and from a distant home airfield. Rapidly deployable launch and recovery element (LRE) mission support kits (MSK) would

enable RPAs to be deployed anywhere in the Nation within 48 hours and to fly within 72 hours of notification. Twelve RPA LRE MSKs would fully enhance this capability and cost $5M each.

Another logistics shortfall is in Total Asset Visibility (TAV). TAV is the ability to provide real-time tracking data of location and status of personnel, vehicles, and equipment for NG leaders responding to domestic incidents. ANG currently uses numerous automated tracking systems and manual processes to provide a limited tracking capability to headquarters elements, however, it does not have a means to integrate with the ARNG's Battle Command Sustainment Support System (BCS3) nor provide first responders or headquarters decision makers the detailed situational awareness that current off-the-shelf technologies allow. Lessons learned from Hurricane Katrina, 2005, Hurricane Ike, 2008, and Hurricane Sandy demonstrated the time-critical nature of decision making in those events and the need for knowing when and where assets were located to make informed decisions. ANG is seeking a TAV system that is compatible with the Army's BCS3 to allow for seamless and efficient response to any incident utilizing the same radio frequency identification technology to monitor movement and maintain inventory of assets coming into and within a response area, as well as blue force tracking for personnel and vehicles. These systems are approximately $500K, and each of the 89 wings requires this capability to provide full TAV for all 54 states, territories, and the District of Columbia.

b. Command and Control

The overall command and control fill-rate status is 86 percent. DOMOPS missions are often conducted in remote locations with minimal commercial wireless connectivity or where infrastructure may be severely damaged. A wireless, mobile, ad-hoc network (MANET) between mission participants capable of running real-time data, video, voice, and other applications in those environments is essential to delivering the fastest lifesaving response possible. Using a combination of radio nodes, wireless routers, tablets, and other devices, this MANET would allow military first-responders to set up a localized network at the event location. Composed of individual networks, these nodes would form a mesh that extends and expands the network as more nodes are added by both ground and airborne platforms, greatly increasing the size and connectivity of the network and the flow of information at the location, as well as to NG and civil leadership. Lessons Learned from Operation Strong Safety 2014, Operation Ardent Sentry 2014, Emerald Warrior 2014, Patriot 2014; Northern Strike 2014, Southern Strike 2014, TX Lone Star Lighthouse 2014, Texas Air-X 2014, Texas Air-X 2015 validated this need. Fielding would be focused on primary DOMOPS ANG assets including Fire and Emergency Services squadrons, Security Forces squadrons, Air Support Operations Squadrons/Groups, RC-26 units, the MC-12 unit, the Search and Rescue squadrons, all Mobile Emergency Operations Centers, and each Air Operations Center and Command Post. In all, the nodes and antennas would cost $12.6M to field and would provide over 512 nodes.

In conjunction with the MANET, first responders to a critical incident require the ability to access all sources of information from a single website. ANG lacks an enterprise-wide solution that fuses information into a common operational picture (COP) to support incident command staff and other mission participants that is compatible with current operational pictures including the Geospatial Interoperability Exploitation-Portable System. This capability gap limits mission participants from being able to efficiently share data and provide critical situational awareness

communication through multiple security classification systems, causing operational degradation and potential mission failure. This capability gap impacts the intelligence and search and rescue communities the most. Ultimately, this would be an enterprise solution, accessible via a website run on the same servers hosting Geospatial Interoperability Exploitation-Portable System, which is located at Eagle Vision ANG units and at the United States Geological Survey, thus providing 24/7 support to incident commanders and NG and civil leadership.

c. Transportation

Vehicle on-hand status is 91 percent. The average age of the vehicles in the ANG fleet is nearly eleven years and has a health or in-commission rate of 91 percent. With investment budget reductions and competing priorities, ANG projected vehicle fleet replacement is funded at only 2.3 percent of its total requirements. One of these vehicle types is needed for Prime Power teams DOMOPS deployment.

Prime Power teams consist of personnel and equipment that deploy during a disaster relief operation to communities of less than 30K people. They provide stable generator power to local emergency shelters, small hospitals or clinics, and police/fire stations until public power is restored. The team's formation was a result of Hurricane Sandy and the critical need for power restoration that event highlighted. These teams require two cargo trucks, three tractor trailers, two flatbed tractor-trailers, one low-bed tractor-trailer, one 1,200 gallon fuel truck, one 10K All Terrain Forklift, and one utilities service truck to perform their function. Lessons learned from Hurricanes Katrina and Rita in 2005, Hurricanes Gustav, Hanna, and Ike in 2008, the Port au Prince, Haiti earthquake in 2010, and Hurricane Sandy in 2012 determined ten Prime Power packages are needed at a total vehicle/equipment cost of $8.4M.

Additionally, the aforementioned RPA's robust capabilities are currently restricted. Unrestricted access to the National Airspace System (NAS) is critical for civil support missions. Current international and Federal Aviation Administration (FAA) safety requirements limit the ability to operate RPAs in international and domestic airspace. RPA flight operations require specific, International Civil Aviation Organization, FAA, or foreign approvals, which restrict aircraft airspace routing and altitude. These restrictions inhibit aircrew training and degrade operational flexibility during Federal and state missions. Federal Aviation Regulation 91.113 Right-of-Way Rules requires all pilots to "see-and-avoid" other aircraft. The FAA will authorize an equivalent "sense-and-avoid" solution for RPAs once one is certified. An RPA operating with either an Airborne Collision Avoidance System for Unmanned Aircraft (the FAA's ACAS-Xu) or Ground-Based Sense and Avoid (GBSAA) system meets the sense and avoid and collision avoidance requirements. The FAA's ACAS-Xu program will bring major enhancements to both surveillance and the advisory logic of the current Traffic Alert and Collision Avoidance System (TCAS) in use today. The new surveillance capabilities will enable collision avoidance protection for new user classes, including small, general-aviation aircraft that are not currently equipped with TCAS. GBSAA systems incorporate low cost commercial off-the-shelf active radar sensors to provide the ANG with an affordable, scalable, and transportable sense and avoid system. Twelve ACAS and ten GBSAA systems are required for both permanent installs and rapid deployment for regional incidents. These improvements are in line with the DOD Policy Memorandum 15-002, "Guidance for the Domestic Use of Unmanned Aircraft Systems", which states, "the Department must continue to make progress in advancing regulatory policy and

guidance associated with UAS [unmanned aircraft system] operations in the NAS, as well as in aggressively developing detect-and-avoid technology to ensure safe operation of UAS in unsegregated airspace." The total cost of these systems is $46.7M.

d. Chemical, Biological, Radiological, and Nuclear (CBRN) Response

The overall CBRN equipment fill-rate status is 93 percent. ANG Emergency Management, Fire and Emergency Services, and CBRN responders need standardized, robust, and field-ready personal CBRN equipment, hazardous material (HAZMAT) protection, carbon monoxide detectors for firefighting, and Toxic Industrial Chemical/Toxic Industrial Material agent detection capabilities. The Occupational Safety and Health Administration requires active detection of contaminants in the environment to ensure personal protective equipment for responders is adequate for the hazards that may be present. CBRN response operations involving any HAZMAT incident require immediate identification of the specific materials to ensure use of the correct personal protective equipment and ensure the responders are not incapacitated by unknown hazards.

2. Effects of ANG Shortfalls

Overall, the ANG has sufficient dual-use equipment for both the Federal and state missions. However, as stated above, shortfalls do exist in certain critical areas that support logistics, command and control, transportation, and CBRN response. Lack of this particular equipment could hamper the ANG's ability to support combatant commanders and local civil authorities, as well as degrade some of these operations. Conversely, its acquisition would be a force multiplier in many emergencies and major disasters. For example, with unrestricted and rapidly deployable RPAs, enabled by ACAS-Xu or GBSAA equipped RPAs fielded with LRE mission kits, incident commanders and civil authorities could have real-time visual information of the event area within 72 hours or less. Utilizing MANET nodes, these same platforms could help establish quick access to wireless information for the first responders, who, when using the enterprise COP, would be able to update leadership with real-time information, respond to directives, and be guided by aerial intelligence, while being fully integrated with other on-site responders. With TAV on the vehicles and inbound Prime Power and CBRN teams, headquarters leadership and on-site command would know when assets would arrive and therefore make accurate decisions about orchestrating the response effort. With this information digitally available, all these actions can be tracked and recorded, providing historical, fiscal, and operational records to be used later for documentation, reimbursements, and lessons learned for future events.

With the current limitations, RPAs will continue to be restricted and slower to respond, reducing their full utilization in DOMOPS events; Prime Power and CBRN teams’ overall effectiveness would remain hampered by equipment and vehicles; and overall command and control will remain fractured and lacking optimization.

Additionally, though the other equipment fill-rates overall are high, many of these items are in some cases decades old and require technological modernization or replacement.

See Chapter 5, Section II, for additional information on ANG shortfalls in equipment and modernization.

3. ANG Requirements and Acquisition Strategies

ANG continues its focus on validating and mitigating readiness capability gaps and ensuring sustainment of these items is considered as an integral part when assessing life-cycle costs for any procurement. Gaps in capabilities critical to wartime and peacetime needs are identified and vetted in an open and rigorous forum of warfighters, who are experts in their respective weapons systems or fields. One venue is the annual Weapons and Tactics Conference, and its results are approved by the Director, ANG. A similar process is conducted at the annual Domestic Capabilities Priorities Conference, which was held in June 2015. The capabilities identified and vetted at these conferences are translated into specific commercial off-the-shelf (COTS) or government off-the-shelf (GOTS) solutions, and nearly always require only non-developmental integration into a weapons system. These capabilities and associated programs are documented in the annual *Air National Guard Weapons Systems Modernization Priorities* book and *Domestic Capabilities Priorities* book.

Once valid DOD requirements are established, they are filled based on the mission priority of the unit and weapon system. ANG uses all available funding sources to fill equipment needs to include the annual DOD planning, programming, budgeting, and execution process; and Air Force central agencies like the Air Force Petroleum Agency or the Air Force Civil Engineering Center, for support items that are interchangeable across the Air Force enterprise. Such items include personal protective equipment, communications equipment, and some vehicles. ANG also fully utilizes National Guard and Reserve Appropriation (NGREA) funding to procure authorized dual-use support equipment or to modernize equipment to ensure its reliability, relevancy, and responsiveness to future national defense and DOMOPS missions.

Though not at full certification presently, ANG is on track for a get-well date in 2018 to finally allow the CNGB to certify all assets have been received as outlined in section 10541 of title 10, *National Guard and Reserve Component Equipment: Annual Report to Congress*.

D. Specialized Equipment

1. Specialized Equipment Shortfalls

The mission of Weapons of Mass Destruction Civil Support Teams (WMD-CSTs) is to support civil authorities at a known or suspected domestic CBRN site by identifying CBRN agents or substances, assessing current and projected consequences, advising on response measures, and assisting with requests for additional state support. The WMD-CST continues to have a limiting factor of non-redundant CBRN equipment for monitoring and detection downrange to include commercially-available, low-visibility, and mobile capabilities for radiological and nuclear (RN) detection. Additionally, WMD-CSTs are limited in capabilities to remotely detect radiological hazards during radiological accidents or incidents. Failure to obtain this equipment jeopardizes WMD-CSTs' ability to support state, local, and Federal preventive RN detection efforts during enhanced steady state environments when there has been an actual or threatened terrorist attack. Failure to obtain lightweight unmanned systems unnecessarily exposes Service members to acute or chronic health hazards.

In addition to the WMD-CSTs, the NG CBRN Response Enterprise (CRE) includes the Chemical, Biological, Radiological, Nuclear, and High-yield Explosive Enhanced Response Force Package (CERFP) and the NG Homeland Response Force (HRF). Serving as follow-on

capability to the WMD-CSTs, the mission of the CERFP and the HRF is to respond to domestic natural and manmade CBRN incidents by assisting local authorities with efforts on saving lives and mitigating human suffering. During response operations, CERFP and HRF personnel exchange mission critical information internally as well as externally with the local incident commander and staff, first responder personnel, and other local civilian and Federal response support agencies. NG CERFP and HRF elements also exchange information with reach-back support organizations, such as the Joint Force Headquarters - State, Joint Task Force - State, and the Consequence Management Support Center. NG CERFP and HRF elements exchange information via multiple formats, such as voice, data, and video. Overall, NG CERFP and HRF operational information exchanges must be expedient and accurate to ensure effective lifesaving response support efforts.

WMD-CSTs conduct information management and sharing using the Civil Support Team (CST) Information Management System tool, a critical component of the WMD-CST equipment set. However, CERFP and HRF elements continue to manage and share mission information disparately via multiple unit-unique solutions and processes that often inhibit consistent and expedient shared situational awareness (SSA). As such, NG CRE force elements require an enterprise-supported COP capability to assist with enabling timely SSA towards achieving effective and efficient information sharing and collaboration among NG WMD-CST, CERFP, and HRF elements, as well as to provide timely and accurate reports. The National Guard Bureau’s (NGB's) objective is to provide enterprise-capable information management and sharing tools, via the NG CRE Information Management System (NG CIMS), for all NG CRE force elements that will enable a more coordinated and successful NG response to domestic CBRN incidents.

2. Effects of Shortfalls of Specialized Equipment

Lack of WMD-CST mobile RN detection equipment restricts detection capabilities to small detection areas and requires extensive time to cover larger areas. Detection accuracy is also reduced due to the size and weight restrictions required with man-portable systems. RN equipment that permits low-visibility detection enhances WMD-CST ability to detect RN threats without alerting the possible handler of the material or device, thus preventing a triggering event when operating in support of state, local and Federal agencies.

WMD-CSTs are programmed to field a heavy unmanned ground vehicle to provide each CST the capability to remotely detect and monitor for an extended duration from a standoff distance in the near term. However, what is required is a light-weight, unmanned, ground system for wide area support and as a mobility option in the event that rotary-wing deployments are required. The projected heavy variant provides unique capabilities that are required for full spectrum operations, but due to its 400lb weight, deployment options by rotary-wing aircraft are hindered. This additional light-weight, unmanned system will provide wider area coverage, improved mobility options, improved situational awareness for the incident commander, and reduce exposure risks to the Service members and the interagency response community.

Failure to obtain the NG CIMS tool for NG CERFPs and HRFs will continue to foster unit-level dependency on utilizing multiple disparate and incompatible information management and sharing tools and processes. These challenges will continue to grow despite the need for more

expedient and accurate SSA, decision making, and lifesaving response efforts when providing NG CBRN response support.

3. Requirements and Acquisition Strategies for Specialized Equipment

Specialized COTS or GOTS equipment for emergencies or response to a major disaster is funded using a combination of ARNG, ANG, Army, and Air Force appropriations, DOD-wide appropriations, e.g., the Chemical and Biological Defense Program (CBDP) funds as well as Air National Guard and Army National Guard NGREA. The NGB continues to work with DOD to pursue modernization for equipment used by CSTs as technology evolves. The CBDP has programmed increases in FY 2016 for research, development, test, and evaluation; procurement; and life-cycle management for CST equipment. Significant unfunded requirements remain. One objective for CBDP will be to mitigate or eliminate the single failure points in CBDP equipment by utilizing NG CIMS.

NGB's objective is to provide NG CERFP and HRF elements an enterprise-capable information management and SSA/COP capability via the NG CIMS tool. Funding is the most critical influencing factor for realizing the NG CIMS tool for the CERFP and HRF. The NGB currently lacks funding to acquire the NG CIMS tool and continues to work with DOD on identifying sourcing opportunities.

II. Statement of Accuracy and Certification Relating to National Guard Equipment

Section 10541(d) of Title 10, U.S. Code requires this report to provide (1) a statement of the accuracy of National Guard equipment inventory projection reported in previous NGRERs, and (2) a certification by the CNGB of the inventory of equipment items that were due to be procured for the National Guard in the preceding fiscal year, but were not received. Figure B-1 provides a CNGB memorandum regarding “Certification and Statement of Accuracy to Accompany the Annual National Guard and Reserve Component Report.”

A. Army National Guard

Transparency, mandated by the Deputy Secretary of Defense, is an auditable path from requirements through the acquisition cycle to delivery of equipment. Funding and procurement quantities are tracked from request through delivery to the unit. Component-level distributions are tracked to include the reasons and justifications for how increases or decreases are applied. The Army has shown steady transparency improvements towards achieving NG equipment certification. With regard to financial traceability, the ARNG has confidence in the level of fidelity the Army has provided to date. However, this effort has not provided the capability to certify delivery of equipment. The certification of materiel delivery requires 100 percent confidence that an item was received by a unit and can be traced back to an appropriation.

Refinement of the Transparency process was approved by the Secretary of the Army on February 25, 2015 (Army Directive 2015-13 [Equipment Transparency Policy]) to identify roles and responsibilities for Transparency stakeholders. The Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA[ALT]) was identified to serve as the secretariat and overall Army policy lead for Transparency.

The Army will continue to oversee proposed changes and improve business processes and data collection through web-based applications. The intent is to simplify the Transparency process and to achieve full transparency through the incorporation of Item Unique Identification (IUID) as part of Global Combat Support System-Army (GCSS-A), which is projected to reach full operability in FY 2017. The Army believes that once IUID is fully implemented, it and GCSS-A capabilities will allow the Army to attain full auditable traceability as required by Congress.

Despite the significant progress, the ARNG remains unable to assess delivered quantities against those that were due, as required by Congress. The ARNG must have the ability to systematically audit and validate equipment delivery data by year of appropriation funding.

Army stakeholders include the Assistant Secretary of the Army for Manpower and Reserve Affairs; Assistant Secretary of the Army for Financial Management and Comptroller; ASA(ALT); ARNG; United States Army Reserve; Headquarters, Department of the Army (HQDA) G-8; and HQDA G-4. Those Army stakeholders concur that the Army is working towards full transparency and is on track to attain this through the IUID coding and increased fidelity with budget justification documents. By the end of FY 2017, the Army expects a significant improvement in transparency when IUID and other tracking systems become fully operational. These systems will more accurately link appropriated funding to equipment delivery to each army formation.

B. Air National Guard

ANG continues to work with the Air Force to incorporate the use of Asset Marking and Tracking processes to enhance equipment accountability with existing systems and authoring policies that identify Functional Area Managers and commander responsibilities.

ANG now actively uses methods to identifying the funding source on new requisitions, allowing equipment tracked with a unique identifier in the Allowance Standards specifically for DOMOPS-related equipment. This provides cradle-to-grave asset visibility throughout the life cycle of these types of items that can be separated from other mission equipment. Additionally, ANG is aggressively working with the Air Force on modifications to the Defense Readiness Reporting System to incorporate visibility of assets, funding sources, status of resources, and other data-mining tools designed to provide a total picture of ANG equipment, personnel, and capability.

Moreover, ANG is in the final stages of fully implementing the use of the Defense Property Accountability System as the Financial Improvement and Audit Readiness (FIAR) compliant system of record for vehicle fleet management and should be fully into the system by December 2015.

Finally, ANG units are conducting base-wide inventories of all assets as part of ANG's FIAR efforts. During Phase 1, our units reviewed all classified items, pilferable supplies, and support equipment recorded on Customer Authorization/Custody Receipt Listings and retained in customers' possession. Phase 2 concluded in March 2015 where we reviewed all remaining support equipment assets stored in the Logistics Readiness Squadrons and other supply activities. The final phase (Phase 3) involves capturing new acquisition information and purchase order data from the various procurement activities to provide the final reconciliation and receipt process that certification requires.

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Appendix D
Acronym Glossary

Acronym	Nomenclature
AAO	Army Acquisition Objective
AAV	amphibious assault vehicle
ABCT	Armor Brigade Combat Team
ABV	Assault Breacher Vehicle
AC	Active Component(s)
ACA	Aerospace Control Alert
ACAS	Airborne Collision Avoidance System
ACC	Air Combat Command
ACS	Agile Combat Support
ACV	Amphibious Combat Vehicle
ADS-B	Automatic Dependent Surveillance-Broadcast
AEA	airborne electronic attack
AEF	air and space expeditionary force
AESA	Active Electronically Scanned Array
AF	Air Force
AFB	Air Force base
AFMC	Air Force Materiel Command
AFNET	Air Force Network
AFOSH	Air Force Occupational Safety and Health
AFR	Air Force Reserve
AFRC	Air Force Reserve Command
AFSOC	Air Force Special Operations Command
AGR	Active Guard and Reserve
AGSE	aviation ground support equipment
AIFF	advanced identification, friend or foe
AK	Assault Kitchen
AM	amplitude modulation
AMC	Air Mobility Command (Air Force)
AMCM	airborne mine countermeasures
AMD	Air and Missile Defense
AMP	Avionics Modernization Program
AMPV	Armored Multipurpose Vehicle
AMRAAM	advanced medium-range air-to-air missile
ANG	Air National Guard
AOC	air and space operations center
AOG	Air Operations Group
AOU	Avionics Obsolescence Upgrade
AR	Army Reserve
ARB	Air Reserve Base
ARFORGEN	Army Force Generation
ARI	Automatic Reset Induction
ARNG	Army National Guard
ARS	Air Reserve Station (Air Force)
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics and Technology
ATM	Air Traffic Management
ATWS	Anti-Tank Weapon System
AVCATT	Aviation Combined Arms Tactical Trainer
BA	Battlefield Airmen

Acronym	Nomenclature
BCA	Budget Control Act of 2011
BCC	Battle Control Center
BCS3	Battle Command Sustainment Support System
BCT	brigade combat team
BFRMP	Boat Forces Reserve Management Plan
BLOS	beyond line-of-sight
BOL	back of launcher
BUMED	Bureau of Medicine and Surgery
C2	command and control
C2CRE	C2 CBRN Response Element
C4I	command, control, communications, computers, and intelligence
CA	civil affairs
CAF	combat air forces
CART	cargo afloat rig team
CBDP	Chemical and Biological Defense Program
CBPS	chemical/biological protective shelter
CBRN	chemical, biological, radiological, and nuclear
CBRNE	chemical, biological, radiological, nuclear, and high-yield explosives
CBT	combat
CCT	Combat Controller Team
CDU	Critical Dual Use
CERFP	CBRNE Enhanced Response Force Package
CHINFO	Chief of Navy Information
CIM	CRE Information Management System
CNAS	Center for New American Security
CNGB	Chief, National Guard Bureau
CNGR	Commission on the National Guard and Reserves
CNO	Chief of Naval Operations
CNR	Chief of Navy Reserve
CNS	Communication, Navigation, Surveillance
CNS/ATM	Communication, Navigation, Surveillance / Air Traffic Management
COCOM	combatant command
COMBATCAM	combat camera
CONUS	continental United States
COP	common operational picture
COTS	commercial off–the-shelf
CRC	control and reporting center
CRE	CBRN Response Enterprise
CRE	CBRN Response Enterprise
CRF	Coastal Riverine Force
CROWS	Common Remotely Operated Weapon Station
CRP	Core Radio Package
CRS	coastal riverine squadron
CSAF	Chief of Staff, United States Air Force
CSCS	Cyber Security and Control System
CSS	combat service support
CST	Civil Support Team
CTC	Combat Training Center
CULT	Common User Land Transportation
CW	cyber warfare
DARNG	Director, Army National Guard

Acronym	Nomenclature
DART	Domestic All-Hazards Response Team
DCC	DART Coordination Cells
DCGS	distributed common ground system
DCP	Domestic Capability Priorities
DET	Displaced Equipment Training
DHS	Department of Homeland Security
DIB	defense industrial base
DMDR	Digital Mission Data Recorder
DMO	Distributed Mission Operations
DMS	diminishing manufacturing source
DMSMS	diminishing manufacturing sources and material shortages
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DOMOPS	Domestic Operations
D-RAPCON	Deployable Radar Approach Control
DSCA	defense support of civil authorities
EA	electronic attack
EAB	echelons above brigade
EGI	Embedded GPS/Inertial Navigation System
ELRF	Eye-safe Laser Range Finder
EMEDS	Expeditionary Medical Support
EMF	expeditionary medical facility
EO	electro-optical
EOD	explosive ordnance disposal
EOH	equipment on-hand
EPAWSS	Eagle Passive Active Warning and Survivability System
EPCS	Electronic Propeller Control System
ERPSS	En-Route Patient Staging System
ESF	Emergency Support Function
ETR	Equipment Transparency Report
EUL	economic useful life
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FFG	guided-missile frigate
FIAR	Financial Improvement and Audit Readiness
FLSW	Fleet Logistics Support Wing
FM	frequency modulation
FMTV	Family of Medium Tactical Vehicles
FP	Force Protection
FTL	Far Target Locator
FTU	formal training unit
FY	fiscal year
FYDP	Future Years Defense Program
G/ATOR	Ground/Air Task Oriented Radar
G4	Generation Four (LITENING)
G-8	Office of the Deputy Chief of Staff for Programs (HQDA)
GA	Guardian Angel
GAO	Government Accountability Office
GBSAA	Ground-based Sense and Avoid

Acronym	Nomenclature
GCS	ground control station
GCSS-A	Global Combat Support System-Army
GCSS-Army	Global Combat Support System-Army
GFE	government-furnished equipment
GFMAP	Global Force Management Allocation Plan
GMD	Ground-based Midcourse Defense
GOTS	government off–the-shelf
GPS	Global Positioning System
GWS	Geospatial Workstation
HAZMAT	hazardous material
HD	homeland defense
HDTS	Helmet Display Tracker System
HEMTT	heavy expanded mobility tactical truck
HH	Hospital Helicopter
HMIT	helmet-mounted integrated targeting
HMMWV	high mobility multipurpose wheeled vehicle
HQDA	Headquarters, Department of the Army
HRF	Homeland Response Force
HSC	helicopter sea combat squadron (Navy)
HSM	helicopter maritime strike squadron
HTV	Heavy Tactical Vehicle
IA	individual augmentee
IAP	International Airport
IAW	in accordance with
IDCRC	Information Dominance Corps Reserve Component
IEW	intelligence and electronic warfare
IFC	Integrated Fire Control
INS	inertial navigation system
IR	infrared
ISIL	Islamic State of Iraq and the Levant
ISO	Isochronal Inspection
ISR	intelligence, surveillance, and reconnaissance
ITAS	Improved Target Acquisition System
IUID	Item Unique Identification
JB	Joint Base
JCADP	Joint Capability Assessment and Development Process
JCR-BFT	Joint Capabilities Release–Blue Force Tracker
JHMCS	joint helmet-mounted cueing system
JISCC	Joint Incident Site Communications Capability
JLTV	Joint Light Tactical Vehicle
JRB	joint reserve base
JRE	Joint Range Extension
JRIC	Joint Reserve Intelligence Center
JSTARS	Joint Surveillance Target Attack Radar System
kHz	kilohertz
kW	kilowatt
LAIRCM	Large Aircraft Infrared Countermeasures
LARS	Lightweight Airborne Radio System

Acronym	Nomenclature
LAV-AT	Light Armored Vehicle (Anti-Tank)
LCS	littoral combat ship
LDP	LITENING Digital Port
LHS	Load Handling System
LIN	Line Item Number
LMI DST	Lead Materiel Integrator Decision Support Tool
LMTV	Light Medium Tactical Vehicle
LRE	Launch and Recovery Element
LVC	Live, Virtual, Constructive
LVSR	Logistics Vehicle System Replacement
MAF	mobility air forces
MAFFS	Modular Airborne Firefighting System
MAJCOM	major command (Air Force)
MANET	mobile, ad-hoc network
MANPADS	man-portable air defense system
MARFORRES	Marine Forces Reserve
MASS	Modular Aerial Spray System (Air Force)
MDS	mission design series
MEDEVAC	medical evacuation
MEOH	Modernized Equipment On-hand (MEOH) (Army)
MH	multimission helicopter
MISO	military information support operations
MITAS	Modified Improved Target Acquisition System
MMCT	Multi-Mission Crew Trainers
MPFUB	Maritime Prepositioning Force Utility Boats
MPRA	maritime patrol and reconnaissance aircraft
MRAP	Mine Resistant Ambush Protected
MSC	Military Sealift Command
MSK	mission support kit
MSU	mobile support unit
MTOE	modified table of organization and equipment
MTV	medium tactical vehicle
MTVR	Medium Tactical Vehicle Replacement
MUM-T	Manned/Unmanned-Teaming
NAS	naval air station
NAS	National Airspace System
NAVAIR	Naval Air Systems Command
NAVELSG	Navy Expeditionary Logistics Support Group
NAVEODTECHDIV	Naval Explosive Ordinance Disposal Technology Division
NBC	nuclear, biological, and chemical
NBCRV	NBC Reconnaissance Vehicle
NCF	naval construction force
NCFA	National Commission on the Future of the Army
NCHB	Navy cargo handling battalion
NCR	naval construction regiment
NDAA	National Defense Authorization Act
NDI	non-developmental item
NECC	Navy Expeditionary Combat Command
NEIC	Navy Expeditionary Intelligence Command
NELR	Navy expeditionary logistics regiment
NET	New Equipment Training

Acronym	Nomenclature
NG	National Guard
NG CIMS	National Guard CRE Information Management System
NGB	National Guard Bureau
NGREA	National Guard and Reserve Equipment Appropriation
NGRER	National Guard and Reserve Equipment Report
NMCB	naval mobile construction battalion
NMS	National Military Strategy
NRU	Navy Reserve Unit
NST	Network Operations Support Team
NSW	naval special warfare
NSWG	naval special warfare group
NUFEA	Navy-unique fleet-essential airlift
NVIS	Night Vision Imaging System
O&M	Operation and Maintenance
OASD(R)	Office of the Assistant Secretary of Defense for Readiness
OCO	overseas contingency operations
OM	Operations Module
OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Administration
P-1	Service Procurement Programs
P-1R	Service Procurement Programs - Reserve Components
PB	President's Budget
PIRL	Prioritized Integrated Requirements List
PLS	palletized load system
PPBE	Planning, Programming, Budgeting, and Execution
PPE	personal protective equipment
PPP	Public Private Partnerships
PRESBUD	President’s Budget
Prime BEEF	Prime Base Engineer Emergency Force
PSU	port security unit
QDR	Quadrennial Defense Review
RAID	Redeployment Assistance and Inspection Detachment
RAS	Remote and Autonomous Systems
RB-S	Response Boat-Small
RC	Reserve Component(s)
RE	Recurring Event
RED HORSE	Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer
RN	radiological and nuclear
RPA	remotely piloted aircraft
RRAD	Red River Army Depot
RTIC	Real Time Information in the Cockpit
RWR	radar warning receiver
SABIR	Special Airborne Mission Installation and Response
SADL	situational awareness data link
SASSM	Selective Availability Anti-Spoofing Module
SATCOM	satellite communications
SCU 8	Software Capability Upgrade 8.0
SE	support equipment

Acronym	Nomenclature
SEAL	sea-air-land
SECAF	Secretary of the Air Force
SELRES	Selected Reserve
SF	security forces
SLEP	service life extension program
SLOS	secure line-of-sight
SMFCD	smart multi-function color display
SMP	Strategic Master Plan (Air Force)
SMTC	Special Missions Training Center
SOC	squadron operations center
SOF	special operations forces
SPAWAR	Space and Naval Warfare Systems Command
SPO	system program office
SPPAD	Single Pass Precision Airdrop
SRP	SPAWAR Reserve Program (SRP)
SSA	shared situational awareness
STUAS	Small Tactical Unmanned Aircraft System
SURGEMAIN	Naval Sea Systems Command - Surge Maintenance
SWE	Surface Warfare Enterprise
T/A	Training Allowance (Marine Corps)
T/E	Table of Equipment
TADSS	Training Aids, Devices, Simulators, and Simulations
TAV	Total Asset Visibility
TCAS	Traffic Alert and Collision Avoidance System
TDA	Table of Distribution and Allowances (Army)
TDL	tactical data link
TFC	Total Force Continuum
TOA	table of allowance (Navy)
TOC	Transnational Organized Crime
TPSB	transportable port security boat
TSU	tactical support unit
TSW	Tactical Support Wing
TWV	tactical wheeled vehicle
U.S.	United States
U.S.C.	United States Code
UAS	unmanned aircraft system
UHF	ultrahigh frequency
UPL	Unit Priority List
USAF	United States Air Force
USAR	United States Army Reserve
USCG	United States Coast Guard
USCGR	United States Coast Guard Reserve
USMCR	United States Marine Corps Reserve
USNORTHCOM	United States Northern Command
USNR	United States Navy Reserve
USTRANSCOM	United States Transportation Command
VAQ	tactical electronic warfare squadron (Navy)
VFA	strike fighter squadron (Navy)
VFC	fighter squadron composite (Navy)
VHF	very high frequency

Acronym	Nomenclature
VP	patrol squadron (Navy)
VR	Fleet Logistics Support Squadron
WEPTAC	Weapons and Tactics Conference
WIN-T	Warfighter Information Network-Tactical
WMD-CST	Weapons of Mass Destruction Civil Support Team
WR-ALC	Warner Robins Air Logistics Center