DEPARTMENT OF DEFENSE

NATIONAL GUARD AND RESERVE EQUIPMENT REPORT FOR FISCAL YEAR 2016

March 2015

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(NGRER FY 2016)

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

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RESERVE AFFAIRS

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FOREWORD

Over the past decade, the Reserve Component (RC) has once again validated its enduring role as a cornerstone of our Nation's Total Force. Using this same history as a guide, it is imperative that RC operational equipping capacity is not diminished.

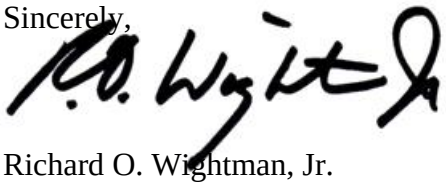
As the Department manages the impacts of the Budget Control Act, individual Services continue to make difficult resource choices, potentially at significant cost to the RC. Historically, practices such as RC underfunding, cascading of outdated equipment from the Active Component (AC) to RC, and labeling of obsolete equipment as "modern" have been considered reasonable for a "Strategic Reserve". This era is over. To fully respond to the worldwide demand for RC capabilities, to ensure component interoperability, and to keep faith with the expectations and experiences of all who serve, deliberate and sustained modernization and procurement funding must be recognized as an institutional imperative.

In 1981, Congress created an equipment appropriation for the RC that stood apart from the President's Budget submission entitled the National Guard and Reserve Equipment Appropriation (NGREA). NGREA was a response to 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 Reserve and National Guard. In recent years, NGREA has provided temporary relief to the Services from adequately reforming their Total Force budgetary processes. Budgeting processes that treat the RC as an indispensable part of the Total Force could neutralize the requirement for NGREA and stabilize RC equipment levels, modernization, and availability that would prevent the resourcing peaks and valleys consistent with the Strategic Reserve paradigm.

Due to the hard work of the Services and several initiatives put in place over the past 13 years, RC equipment levels are at some of the highest in recent history; however, the Services have yet to achieve transparency in their procurement and distribution processes. Whether attempting to preserve decision space or Service flexibility, the methodologies and movement of equipment between components remains opaque and lacks standardization across the Services. To further enterprise-wide transparency, the Department has initiated an independent study of the RC Equipment Transparency Report (ETR) to evaluate both its value and effectiveness in providing the required transparency mandated by the Commission on the National Guard and Reserves, Deputy Secretary of Defense, and DoD Instruction 1225.06. This study will suggest potential improvements to and alternatives for the ETR.

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. Reserve and Guard forces must therefore be equipped and appropriately funded to meet the challenges of this new era while fulfilling their obligations to the Total Force.

Sincerely,



Richard O. Wightman, Jr.
Principal Deputy

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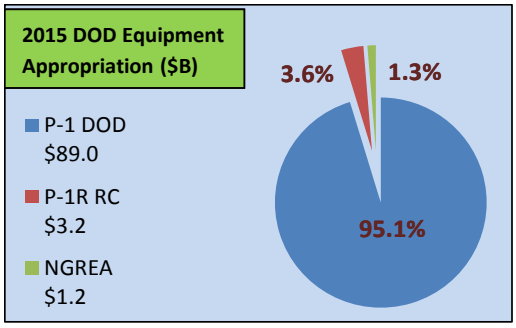
Chapter 1 Overview

I. Reserve Component Equipping Challenges

Strategic Imperative: The Active Component (AC) has historically looked to the Reserve Component (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 must remain a top tier priority for RC and AC leaders.

Congress, echoing national sentiment toward "citizen warriors" and their historic role, has enthusiastically supported equipping our RCs each fiscal year. However, the way that we equip the RC is anything but straightforward; a variety of authorities, maturing mission sets, and shrinking budgets each impact the process to convolute expectations.

Ways we equip the Reserve Components: The annual President's Budget (PRESBUD) request is based on requirements determined by and for the Total Force. The associated appropriation as demonstrated by the chart shown is Active Component centric. The PRESBUD reflects and integrates two requests; the P-1, which contains the official Active and Reserve Component budget request, and the P-1R, which is provided as an estimate solely for information purposes and is not associated with actual appropriations. Despite the expectations of DOD and Congressional leaders associated with the P-1R, the Reserve Components rely on equipment filtered through the Active Component and their associated priorities.



In 1981 Congress created an equipment appropriation for the RCs that stood apart from the PRESBUD submission entitled the National Guard and Reserve Equipment Appropriation (NGREA). NGREA was a response to 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 Reserve and National Guard.

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 only in response to Cold War scenarios.

Challenges: Funding represents the constant balance of and trade-offs between what is needed for operational integration and sustainment, relative to equipment required for reorganization and modernization. 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.

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 and is subject to significant Congressional restrictions. As a planning tool, it is unpredictable as it falls outside normal 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". As a practical matter, moving aging systems into these units creates a capability and interoperability gap between AC and RC 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. While this may be justified in some instances, it obfuscates the fundamental issue of equipment interoperability between the RC and AC while simultaneously masking underlying funding shortfalls.

Options: To mitigate a degradation of RC readiness and their ability to respond when called upon, any course of action should support the tenants of operational relevance and interoperability. Transparency in funding and equipping will ensure that the Services keep faith with the public's mandate 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.

As learning organizations, the Services should continue to embrace not only operational lessons learned, but also many of the emerging technologies being leveraged to increase technical and tactical proficiency and to reduce costs. The increased use of and reliance on enterprise-wide networked simulation is allowing for a level of integration and realism never experienced. The benefits to the organization, the individual warfighter and to the environment are forever changing the ways in which we train and fight. Equipment sharing back and forth 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, recognizing that some units, either mobilized under Title 32 or in a standby role, may require specific equipping to ensure availability and responsiveness in those missions.

It is imperative that the Services' RC appropriations achieve three distinct goals. First, Reserve-specific appropriations must ensure the continued operational and interoperability capacity of Reserve and Guard units. Second, they should provide predictability to Service leadership and planners and minimize the reprogramming of funds between components as resources remain scarce. Third, they must allow the requisite transparency enabling additional leadership oversight, planning, and participation in meeting Reserve and Guard specific mission tasks, consistent with the transformation of the threat environment, domestic response posture, and constituent concerns.

The Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA) recently contracted a study of the Equipment Transparency Report (ETR) to evaluate both its value and

effectiveness in providing the requisite transparency as mandated by the Deputy Secretary of Defense and DOD Instruction 1225.06 *Equipping the Reserve Forces* based on the recommendations of the Commission on the National Guard and Reserves. This study will suggest both potential improvements to and alternatives for the ETR. Additionally OASD/RA is actively pursuing more meaningful ways to engage Congress to include supplemental briefs to Congress on RC equipment issues.

II. Scope of the Report

The National Guard and Reserve Equipment Report (NGRER), mandated in section 10541 of title 10, United States Code, is a statutory requirement that reflects Congressional interest in ensuring a well-equipped and robust RC capability within the armed forces. The NGRER identifies major items of equipment in the RC inventories that are important to the Services, DOD, and Congress, and also outlines how that equipment is being acquired and disposed of by the Reserves for the 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 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.

The three 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 on the respective individual RC.

RC inventories include thousands of different types of equipment. The FY 2016 NGRER highlights 898 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 2011 NGRER	FY 2012 NGRER	FY 2013 NGRER	FY 2014 NGRER	FY 2015 NGRER	FY 2016 NGRER
ARNG	404	396	365	271	320	305
AR	212	208	215	230	231	238
USMCR	195	213	150	212	201	205
USNR	36	44	42	42	40	36
ANG	31	31	30	30	29	29
AFR	17	16	20	18	17	16
USCGR	19	19	53	74	75	69
Total	**914**	**927**	**875**	**877**	**913**	**898**

III. 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.

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 $28.4B total shortage cost for the ARNG and $10.2B for the AR. The ARNG shortage reduces to $27.4B, and the AR shortage reduces to $9.8B when authorized substitutions are included. More information on the Army's equipping strategy and their use of authorized substitutions can be found in the Service's Chapter 2, section IV.

We appreciate the Army's effort in Section IV – Army Equipping Assessment in Chapter 2 to explain the complexities of Equipment On-hand and Modernization Levels within the Army. 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 quickly through the indefinite service life of our platforms."[1] The Army often refers to modernization in terms of "wartime requirements." That paints a picture of RC modernization levels that appear higher than defined because while the RC may have the right quantity of equipment to go to war, they may not have the right quality of equipment. This creates confusion for leadership both within DOD and in Congress that don't understand the Army's tiered modification system that delineates "Modern" equipment and "Most Modern" equipment and then aggregates them into a single "modern equipment" level for wartime requirements. This methodology may result in the Army calling a piece of equipment modern when it does not meet their definition of modernized equipment. For example, the M16A2 is a fifth generation rifle that the Army is currently replacing with the M4A1 rifle, and according to the Army's modernization level ratings, the M16A2 is

[1] *Army Equipment Modernization Strategy*, March 4, 2013, pg. 10.

“Modern”. The M4 and M4A1 rifles are considered “Most Modern”. However, by the Army’s modernization level business rules, the M16A2 is “Not Modern” because it is on the Army’s Divesture List.

Given the above revelations, it is clear that Army Headquarters no longer uses the term "modern" to describe a piece of equipment in the well understood sense of the word by Departmental and Congressional leaders. By conflating the terms "modern" and "most modern" into an aggregate grade of "modern," the Army has decided that old, but good enough can be reported as modernized. OASD/RA is concerned that the RCs significant inventory of good enough equipment will suppress the demand signal to keep them truly modern and compatible.

The Marine Corps Reserve (USMCR) reflects a 22.7 percent shortage of its major items, an increase of $778M from last year’s report. The increase is primarily due to the inclusion of a shortage of three KC-130J aircraft this year. 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.

Chart 1-2. Beginning FY 2015 Reserve Component Equipment Shortages

Reserve Component	Requirements ($M)	On-hand ($M)	Shortage ($M)	Shortage (% of Reqd $s)
ARNG	120,182.7	91,743.6	28,439.1	23.7%
AR	34,604.8	24,443.7	10,161.1	29.4%
USMCR	7,369.4	5,698.5	1,670.9	22.7%
USNR	6,628.6	6,248.7	379.9	5.7%
ANG	46,740.2	40,809.6	5,930.6	12.7%
AFR	25,697.0	23,357.5	2,339.5	9.1%
USCGR	53.8	51.4	2.4	4.5%
Total	**241,276.5**	**192,353.0**	**48,923.5**	**20.3%**

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

IV. Equipment Procurement

The RC procurement funding levels for the period FY 2009–FY 2016 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 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 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 $3.0B in FY 2016. 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 2015. However, NGREA has more than doubled from 13 percent of the total RC procurement funding in FY 2009 to 27 percent in FY 2015. In FY 2015, NGREA funding is 55 percent of the ANG's total procurement funding and 49 percent of the Marine Corps Reserve'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 (CY)	1,892.9	626.2	63.1	145.3	342.7	266.8	3,337.0	
	NGREA	415.0	185.0	60.0	65.0	415.0	60.0	1,200.0	
	Total	**2,307.9**	**811.2**	**123.1**	**210.3**	**757.7**	**326.8**		**$4,537.0**
2016	President's Budget P-1R (R)	1,920.9	461.0	44.2	266.3	238.3	57.5	2,988.1	
	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.
Note 5: 2016 NGREA values will not be available until FY 2016 appropriation bill is passed.

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	3.8%	Prior-Year
2004	55,685.8	54,188.3	1,497.5	2.8%	Prior-Year
2005	71,951.7	70,022.9	1,928.8	2.8%	Prior-Year
2006	75,380.8	72,701.4	2,679.4	3.7%	Prior-Year
2007	101,308.4	93,414.8	7,893.6	8.5%	Prior-Year
2008	125,306.0	119,191.7	6,114.3	5.1%	Prior-Year
2009	98,081.3	89,915.2	8,166.1	9.1%	Prior-Year
2010	97,601.1	92,150.5	5,450.6	5.9%	Prior-Year
2011	92,146.2	86,331.0	5,815.2	6.7%	Prior-Year
2012	81,205.3	76,289.9	4,915.3	6.4%	Prior-Year
2013	68,465.1	65,171.1	3,293.9	5.1%	Prior-Year
2014	67,496.4	63,987.1	3,509.3	5.5%	Prior-Year
2015	68,809.8	65,472.8	3,337.0	5.1%	Current Year
2016	78,399.4	75,411.3	2,988.1	4.0%	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.

V. 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 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. In 2011, ARNG Equipment On-hand (EOH) was at 77 percent. At the end of FY 2014, total EOH was up to 93 percent.

The ARNG's top equipping focus areas are:

1. **Modernize the ARNG helicopter fleet:** CH-47D modernization to CH-47F is fully funded and should complete, via transfers, by FY 2018. Other modernization efforts are generally on track with the exception of the H-60 mission design series; budget funding reductions will decrease H-60L transfers from the AC. Army H-60A divestment is

scheduled for FY 2025. H-60M buyout is forecasted for FY 2028. The ARNG is scheduled to receive H-60Vs ahead of the USAR when production begins, currently scheduled for 2018 with the first delivery in 2019.

2. **Modernize the ARNG tactical wheeled vehicle (TWV) fleet:** High mobility multipurpose wheeled vehicles (HMMWV) are critical command and control and transportation assets during domestic operations. The ARNG is excess of its FY 2018 HMMWV requirement. The ARNG HMMWV fleet consists of 43 percent up-armored HMMWVs, which is the most modern HMMWV in the Army. The ARNG medium tactical vehicle (MTV) fleet is 100 percent filled and 60 percent of the fleet is comprised of the Army's most modern up-armored Family of Medium Tactical Vehicles (FMTV). Key Army Decision Points in FY 2016 will be to determine a recapitalization or replacement strategy for the first generation FMTVs that are approaching 16 years of service life. Adequate future funding will be critical to ensuring the ARNG's MTV fleet does not return to previously low modernization levels.

3. **Procure engineer equipment to fill shortfalls in modernization equipment:** Equipment shortfalls due to modernization levels of legacy equipment include general engineering equipment consisting of firefighting support and construction equipment.

4. **Maintain the ARNG to no less than 80 percent of Critical Dual Use equipment on-hand:** Critical Dual Use (CDU) equipment items are those Army items determined critical to the support of homeland defense and defense support of civil authorities (DSCA) missions. Current CDU equipment on-hand levels are at 94 percent, an increase from 65 percent since 2006. Supporting the ARNG's dual Federal and state roles, UH-60 Blackhawk modernization, general engineering equipment, chemical/biological protective shelters (CBPS), semitrailers, and HMMWV ambulance modernization shortages are high priorities.

5. **Improve the ARNG command and control capability by focusing on fielding Army mission command systems to ARNG brigade combat teams:** Joint Capabilities Release–Blue Force Tracker (JCR-BFT) is a key situational awareness and command and control system. Currently, the JCR-BFT system is being fielded to ARNG at significantly reduced authorizations. The ARNG has experienced improvements in mission command modernization and readiness, but has concerns about future fielding due to budget reductions

6. **Build essential field-level maintenance facilities to effectively repair, service, and maintain ARNG equipment:** Many ARNG shop facilities are more than 50 years old and are neither designed nor equipped to provide a safe, environmentally-friendly workplace, capable of meeting the demands of the Army's two-level maintenance doctrine to support and maintain a modern and complex, up-armored vehicle fleet.

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 Total 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 275,000 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 2014, the Army Reserve EOH posture improved to 87 percent due to new procurement and the redistribution of equipment. When excluding authorized substitutes and approved in-lieu of items, the Army Reserve's overall EOH is 80 percent. The redistribution of equipment is providing a cost-effective near-term solution for filling equipment shortages in a period of fiscal constraint. 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. Substitute items consisting of multiple model variations further challenge efforts to affordably maintain aging fleets and sustain readiness.

The Army Reserves' top equipping focus areas are:

1. **Sustain procurement funding rates:** Reductions in the FY 2014 budget adversely impacted the Army Reserve with the restructuring and delaying of key enabler programs. As a result, momentum gained in modernization has declined and poses a challenge in achieving interoperability with Joint Forces. Establishing a sustained funding rate in the base budget is critical to executing a viable strategy for modernizing enabling platforms, which is mission essential for the Army Reserve to complement the Total Force.

2. **Modernize Light and Heavy Tactical Wheeled Vehicle (TWV) fleets:** Budget trends are creating funding imbalances impacting readiness and delaying efforts to fill modernization shortages of tactical wheeled vehicles. Consequently, delays in new procurement and modernization are increasing sustainment costs required to maintain readiness levels of the legacy TWV fleet, which risks interoperability with Total and Joint Forces. The most significant challenges impacting readiness and interoperability of the Army Reserve's TWV fleet are critical equipment shortages and modernization gaps within the light and heavy vehicle fleets.

3. **Modernize Echelons Above Brigade (EAB) Liquid Logistics capabilities:** The Army Reserve's bulk petroleum assets enable the Army to fulfill its duties as the executive lead agent in providing petroleum to the Joint Force. 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. This equipment includes fuel tankers (5K and 7.5K gallon capacity), fuel supply points, fuel storage, and tactical pipelines, many of which are approaching or exceeding their economic useful life without a bridging strategy for modernization.

4. **Modernize and fill shortages in EAB Bridging and Engineering capabilities:** The Army Reserve provides 36 percent of the Army's EAB Mobility structure, which includes construction, tactical bridging, and engineer support. Mobility equipment

shortages and modernization budget shortfalls exceed $900M in documented requirements and over $1.2B when including undocumented modernized requirements.

5. **Modernize Critical Dual Use items in support of homeland defense and DSCA:** Army Reserve units rely on equipment categorized as CDU equipment that supports contingency operations as well as homeland defense and DSCA missions. Of the total Army Reserve CDU items identified, over 90 percent of the CDU items have an equipment on-hand fill rate of at least 89 percent. The TWV fleet serves as the Army Reserve's primary system for delivering unique capabilities with 78 percent listed as CDU items for supporting homeland defense and DSCA missions. Total resources required to fill documented shortages and close modernization gaps within the Army Reserve's TWV fleet exceed $3B.

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 sources preplanned, rotational, and routine combatant commander and Service requirements across the spectrum of military operations. 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:

1. **Transition to the KC-130J Super Hercules:** The KC-130J has already been fielded to the Marine Corps AC, while initial fielding to the RC began with arrival of the first aircraft in FY 2014. The remaining KC-130T aircraft are projected to remain in RC service until FY 2022. The extended nature of this fielding timeline results in significant operational and training compatibility issues. The total cost to purchase all 28 RC KC-130J aircraft is more than $2B. Only 10 of the remaining 26 required airframes are programmed across the Future Years Defense Program.

2. **Procurement of the MQ-21A Blackjack Small Tactical Unmanned Aircraft System (STUAS):** 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 is scheduled to receive the MQ-21A at the end of the current fielding plan in FY 2021. Lack of these systems creates a significant 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 are the recapitalization of aging aircraft for Reserve aviation squadrons and the purchase of watercraft and expeditionary hardware for Coastal Riverine Force (CRF), Naval Construction Force (NCF), and Navy Expeditionary Logistics Support Group (NAVELSG) units.

1. **Aircraft procurement (C-40A, F/A-18E, P-8A, and KC-130J):** The procurement of the two additional required C-40As would meet the Navy's "risk adjusted" inventory objective and replace the aging and more maintenance intensive C-20G.

   The two Reserve F/A-18A+ squadrons are the Navy's only dedicated advanced adversary squadrons. Due to their age and material condition, the Navy is exploring options for recapitalizing the legacy RC Hornet squadrons with newer platforms. The F/A-18E and Joint Strike Fighter would provide sustainable platforms to meet the Navy's vision of future warfare capabilities.

   Increased combatant command 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.

   In the near term, mission sustainment will be accomplished with the current Navy Reserve C-130T inventory of 24 aircraft. However, the KC-130J offers twice the "Ready for Tasking" days as the C-130T and is the best long-term sustainment option for the fleet.

2. **Expeditionary equipment procurement (CRF, NCF, and NAVELSG):** 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 of squadrons with MK VI Patrol Boats and Riverine Command Boats.

   Although the NCF has experienced significant force reductions over the past several fiscal years, they maintain capacity to support Global Force Management Allocation Plan requirements and unplanned contingencies. Funding is still required to upgrade command, control, communications, computer, and information equipment and tactical data networks, and to procure Synthetic Weapons Training simulators.

   Funding is required to enhance NAVELSG mission readiness with a C-5/C-17 loading simulator, additional construction equipment, tactical vehicles, containers, and various additional required Table of Allowance items.

E. The Air National Guard (ANG)

The ANG continues to support the full spectrum of humanitarian and combat missions overseas and in the homeland. 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. Modernizing, maintaining, and replacing capabilities are among the challenges the ANG faces. Modernization is critical to the Guard, which generally flies the oldest equipment in the Air Force. 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:

1. **Adequate funding for weapon system modernization efforts:** With the need to fully fund ongoing operations and continued pressure on defense budgets, obtaining adequate funding for both procuring new equipment and modernizing existing equipment continues to be a challenge. In its *Air National Guard 2014 Weapons Systems Modernization Priorities* book, ANG has documented a $9.23B shortfall for modernization and recapitalization of the ANG aircraft fleet and associated equipment.

2. **Sustaining legacy weapon systems:** The ANG operates and maintains the oldest aircraft in the Air Force. Overall, the average age of aircraft within the ANG is 26.5 years. The ANG's Weapon Systems Sustainment Working Group has identified maintenance needs that include procurement of new advanced support equipment to replace the obsolete equipment built with 1970s and 1980s technology, modern leak detection equipment, alternative tow vehicles, and new C-130 Isochronal Inspection Stands meeting Air Force safety standards.

3. **Adequate funding for dual-use capabilities to support Federal and state missions:** The need for continued modernization on par with the Air Force, as well as, the ability to successfully respond to requests to support civil authorities with its dual-use equipment and aging fleet of aircraft remains a paramount concern for ANG leadership. Continual unit mission changes, increased classic associations, and the corresponding reduction in equipment authorizations dilute ANG infrastructure and expertise likewise reducing the effectiveness of ANG's ability to respond to requests from civil authorities.

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, mobilization, 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.

High-cost, high-priority requirements looming in the near future such as compliance with mandated national and international Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) standards will consume large portions of AFR's procurement funding. Critical combat capabilities must be postponed until future years or be purchased in reduced uneconomical quantities over several years. The AFR will emphasize those requirements that

provide the best combat return but will be unable to maintain the fleet to its current standards. AFR focus for additional procurement funding is on improving combat lethality by integrating sensors and precision weapons; improving survivability by modernizing defensive systems; and improving aircrew situational awareness by improving communications and data links.

The AFR's top equipping challenges are:

1. **Defensive systems:** AFR defensive system modernization requirements include large aircraft infrared countermeasures (LAIRCM), next generation missile warning systems, integrated electronic warfare suites, and hostile fire indication systems.

2. **Data link and secure communications:** The AFR will continue to equip C-130s in FY 2015 with the Real Time Information in the Cockpit (RTIC) data link system. These are upgrades with ARC-210 and Situational Awareness Data Link (SADL) radios to provide crews with advanced secure line-of-sight (SLOS) and beyond line-of-sight (BLOS) communications situational awareness and the ability to be dynamically mission re-tasked.

G. The United States Coast Guard Reserve (USCGR)

The Coast Guard also performs global missions in support of DOD combatant command operational plans. The Coast Guard's primary expeditionary resources are the eight Coast Guard Port Security Units (PSUs) that operate under the Navy Expeditionary Combat Command and are often embedded within the Navy's Coastal Riverine Force. These Coast Guard PSUs are unique because they are principally Reserve-staffed units, consisting of only six AC personnel within a 150 total complement.

Coast Guard Mobile Support Units (MSUs), also primarily staffed with Reservists, are responsible for logistical support operations anywhere in the world where CG 110' Island Class cutters are involved. MSUs are air, sea, and land deployable within 96 hours of mobilization in support of overseas contingencies, Coast Guard patrol boat missions, and continental United States emergencies.

The Coast Guard Reserve's top equipping challenges are:

1. **All terrain vehicles/towing capacity:** The Coast Guard Reserve has made strides in the PSU community to recapitalize and upgrade major equipment systems; however a high operating tempo over the last thirteen years, responding to both continental United States and combatant command overseas support missions, has created a need to replace aging and rapidly degrading equipment. Examples include the recapitalization of vehicles approaching end of lifecycle and all terrain forklifts. PSUs require a vehicle capable of towing a Transportable Port Security Boat (TPSB) and need utility trailers for moving heavy equipment.

2. **Communications equipment—compatibility with DOD forces:** The procurement of modernized communications kits has substantially enhanced interoperability with DOD partners by providing access to secure and non-secure data encryption. Additional communications kits are needed to meet operational plans. Some engineering issues must be overcome, but TPSB communications suites should be fully upgraded in FY 2015.

Additionally, the PSU community is conducting replacement of very high frequency (VHF) and ultrahigh frequency (UHF) radios on the TPSBs with a single Unity radio capable of transmitting and receiving on both frequencies. Upgrades are anticipated to occur throughout the fleet in FY 2015.

3. **MSU/PSU logistical support and tactical equipment:** The Coast Guard Small Boat Product Line continues working toward fully integrated logistics support for the TPSB Generation IV and Response Boat-Small Generation II boat platforms. Integration is expected to be complete by March, 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

As the Nation's senior Military Service, the United States Army has always been indispensable to the security of the United States. The Army is the only Military Service that is charged with and capable of conducting prompt and sustained combat operations on land. The deployment of U.S. Soldiers is an unambiguous symbol of national resolve and commitment. As the Army emerges from over a decade of war, it is aggressively adjusting to meet future security threats to the Nation.

The Army's Strategic Vision clearly articulates, within the context of the environment and existing guidance, what the Army does for the Nation, as well as the characteristics the Army must have to fulfill its mission. This strategic concept, first expressed as conflict prevention, conflict control, and conflict termination, has been the foundation of the Army's obligations to the Nation. Today, the Army prevents conflict, shapes the environment, and wins decisively when called.

The Army *prevents* conflict and destabilizing activities through its credibility as a modern, combat-ready, globally-deployable force. The Army also *shapes* security conditions favorable to U.S. and allied interests. If prevention fails and shaping is insufficient, the Army remains ready to decisively defeat the enemy and *win* a campaign as part of the joint force.

The Army operates in the human domain. Soldiers seize, retain, and exploit the initiative to gain and maintain a position of relative advantage through simultaneous offensive, defensive, and stability operations. The two core competencies of Army forces are *combined arms maneuver* and *wide area security*.

Over the next several years, the Army will move to become a regionally-aligned force, with units *assigned* and *allocated* to combatant commands. Once complete, Soldiers will be even more responsive to theater security cooperation and contingency response requirements, deploying from the squad to joint task force level.

The year 2015 marks the 42nd anniversary of the Total Force Policy. The Army will continue to seamlessly integrate the Active, Guard, Reserve, and Civilian components. Over the past decade plus, the Army National Guard (ARNG) and United States Army Reserve (USAR) transformed from a strategic reserve to an operational reserve. The Army remains committed to ensuring the Total Force is manned, trained, organized, sustained, equipped, and employed to support combatant command requirements.

(Adapted from *Army Strategic Planning Guidance 2013* and Army Doctrine Publication 3-0, *Unified Land Operations*).

B. The Army Equipping Guidance

The Army Equipping Guidance describes the strategic environment through 2016 and how it relates to equipping the force. The guidance explains how it is synchronized and nested with the Army Equipment Modernization Strategy and the Army Equipment Modernization Plan to achieve an Army that is versatile, tailorable, and affordable. It also tells how the Army will equip during the transition from the current Army Force Generation (ARFORGEN) model to the future Force Generation model, including the policy and goals for equipping the operational force, the generating force, and the Reserve Components. It describes how the Army can redistribute equipment to achieve Equipment On-hand (EOH) equilibrium across the force and the means to get the most from every budget dollar. 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 Active Component (AC) and the Reserve Components (ARNG and the USAR). It is a dynamic and flexible document that identifies the equipping challenges the Army faces and provides ideas and solutions for meeting those challenges. 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

This is the main effort. Since 2006, the Army has used the ARFORGEN model (structured progression of readiness over time) to produce trained, ready and cohesive units. It was, and for the immediate future will remain, the primary method for equipping rotational AC and RC units for deployment and contingency missions. The Army is developing a Sustainable Readiness Model that will modify how it generates forces to sustain the Army's ability to provide a manned, trained, and equipped Total Force to meet the full range of current and emerging combatant commander requirements. It will enable the Army to better tailor a versatile mix of active and reserve capabilities and deploy them rapidly for unified land operations of various durations.

The guidance provides units increasing levels of equipment at critical equipping points based on their ARFORGEN phase or Force Generation pool. It equips non-rotational units such as the generating forces that train Soldiers and ensures that the Reserve Components 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 Reserve Components with the operational capabilities and strategic depth required of an operational force. It 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. While the Army has approximately 90 percent of its Modified Table of Organization and Equipment (MTOE) equipment on-hand, at the individual

unit level they either have too much or not enough. 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 Department of Defense Instruction (DODI) 1225.06, *Equipping the Reserve Forces*. To date, the Army has reconciled more than 83,000 pieces of equipment of the 85,000 transferred out of the Reserve Components since 2003.

3. Saving Money

Our processes and policies must take into account the significant reduction in funding under which we must operate. Every dollar not spent wisely directly diminishes the opportunity to reduce risk elsewhere. Sequestration, higher than expected war costs in Afghanistan, and budget reductions beyond will reduce Procurement and the Operation and Maintenance funding needed to keep our formations ready for their assigned missions.

The Army will focus on preserving as much of the budget as possible for force modernization and to achieve and sustain future capabilities. This means it must reduce second destination transportation costs, divest expensive older systems and niche capabilities, and reduce excess, whose costs can dramatically impact readiness. We must get equipment distribution and redistribution right and at the lowest levels. Fixing shortages through internal redistribution is a priority. In all cases, decisions must be based on accurate knowledge of equipment on-hand.

Transparency is key. Accountability of equipment must be established and maintained through accurately and rapidly documenting inventories to enable 100 percent visibility. The challenge is to be able to trace procurement-funded equipment from the President's Budget request to delivery at the unit level. During Operation Enduring Freedom and Operation Iraqi Freedom/New Dawn the Army lost the ability to track equipment deliveries to the Reserve Components. Equipment could not be traced to a particular sourcing document. The Army has made significant headway in achieving transparency through a collaborative automated collection tool. The Army currently tracks 129 Reserve Component equipment programs from FY 2009 to FY 2013, provides Reserve Component funding and procurement data for annual budget exhibits, and submits semiannual equipment transparency reports to the Office of the Assistant Secretary of Defense, Reserve Affairs (OASD/RA).

C. Army Equipping Assessment

The Army Equipping Process has resulted in equipment EOH level of 89.89 percent for all components (AC, ARNG, USAR)—to meet today's requirements! However, EOH levels are simply a quantitative measure of equipment that meets "current" Army requirements. The Army must constantly review update requirements to best meet tomorrow's challenges. Today's equipping decisions must use a more qualitative approach to best meet the equipping requirements for tomorrow's Army. To best explain the importance of this qualitative approach (equipping the Army of tomorrow), the Army has introduced a new section (Section IV) at the end of this chapter to provide a more informative and accurate assessment of Army equipping readiness. Our new section explains how the Army uses this qualitative methodology to assess shortfalls and invest in modernization rather than the simple quantitative approach that

encourages the resourcing of yesterday's Army. The qualitative assessment uses modernized replacements and substitutes (equal to or greater than required modernization level) to calculate shortages and the value of on-hand equipment. The NGRER does not consider or include substitutes in its on-hand equipment calculations making it a more quantitative assessment of the Army's EOH status. Section IV provides a comparison of both methodologies and shows how the quantitative approach overstates Army shortages by over $3B.

D. Plan to Fill Mobilization Shortages in the RC

After more than 10 years of war the Army finds itself in reasonably good condition, equipment-wise. As stated above, it has almost 90 percent of its MTOE authorizations. In 2014, the Active Component had approximately 95 percent of authorized equipment on-hand, the ARNG had approximately 91 percent, and the USAR had approximately 87 percent. These percentages should improve as equipment is returned from theater, reset/repaired, and redistributed to units.

In conjunction with ARFORGEN and the future Force Generation model, and in compliance with DODD 1200.17 and DODI 1225.06 the Army continues to comparably equip the Active and Reserve Components to meet mission requirements. The Army equips all forces based on their priority within the Dynamic Army Resourcing Priorities List (DARPL). In addition, it ensures the Reserve Components (RC) always have at least 80 percent of their Critical Dual Use (CDU) items. These are MTOE-authorized items determined critical to the support of HD and DSCA missions. This allows units to meet their HD and DSCA requirements when not deployed.

When ARNG units deploy they take their MTOE equipment with them. This can create a shortage of CDU equipment within the state. To compensate, states have enacted Emergency Management Assistance Compacts (EMAC) with each other. In EMAC, states guarantee to support each other in the event of a natural or manmade catastrophe.

The Army ensures all units are equipped to accomplish their missions. When there are shortages the Army implements innovative methods to ensure commanders have the right amount and types of equipment for training and to use when deployed. A common method leverages Pre-deployment Training Equipment (PDTE) sets and Theater Provided Equipment (TPE).

The PDTE sets are maintained by the AC and pre-positioned at key Mobilization Force Generation Installations (MFGIs) in support of individual and collective training requirements prior to any AC or RC unit deployment. The PDTE sets consist of mostly theater specific and very low density items that are otherwise not available to units. These sets remain at the MFGIs when the units deploy to ensure availability for the next training rotation and to reduce transportation cost.

When the units arrive in theater, they are issued TPE unique items. Maintaining TPE in theater serves valuable purposes. It minimizes the cost and friction of deploying the equipment back and forth with returning and deploying units, and it ensures that theater-required equipment is where it needs to be.

E. Initiatives Affecting RC Equipment

1. Current Operations

The Army's operational tempo in support of overseas contingency operations (OCO) has lessened, but it still places a strain on the force, particularly with the ARNG and USAR. 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 strain on personnel will be reduced. Counterintuitively, however, the strain and wear on equipping will increase, due to increased need and use of equipment caused by longer Train/Ready phases.

The Nation's uncertain fiscal situation, combined with anticipated future reduction in wartime demand, is prompting calls for decreased defense spending. DOD leadership has heeded these calls, directing the departments to make hard choices and reduce spending. 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 that ARNG and USAR units are equipped to execute their HD and DSCA missions as well as their other operational requirements. To this end, Headquarters, Department of the Army (HQDA), ARNG, and USAR define, validate, and update the CDU equipment list annually, identifying those MTOE items necessary for the accomplishment of the ARNG and USAR Federal missions and, in the case of the ARNG, state missions. The minimum acceptable level of CDU equipping is 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 that 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 manmade disasters as identified in national planning scenarios and gives recommendations to HQDA on what equipment should be in the Army CDU equipment list.

The following five topics describe the Army efforts to bring the ARNG and USAR capabilities in line with future demands: Operationalizing the Reserves, Transparency, Homeland Defense and Defense Support of Civil Authorities, Reset Phase, and What We Bring to the Fight.

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 ARFORGEN model. 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 that "while there are issues to address with an operational reserve, the benefits far outweigh the challenges and represent the best path forward."

3. Transparency

In 2008, 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.

To implement these directives, two important steps were taken by all Military Services. First, component-level funding and procurement quantities were included on key Congressional budget exhibits, such as the Budget Item Justification Sheet (the "P-40" form) and the Production Schedule (the "P-21" form). Providing this data gives both Congress and the RCs greater confidence that the equipment requirements developed in the budget formulation are both accounted for and clearly visible in the President's Budget submission. Consistent with DOD's intent, it also provided stakeholders with component-level funding data that could be linked to the acquisition process.

The second step taken was to track the 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 (ETR). In close coordination with the ARNG and USAR, HQDA prepares the ETR semiannually and then provides the report to OASD/RA. Collecting the data is 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. As an example, a new truck may be funded by the FY 2014 appropriation and ultimately delivered to an ARNG unit, but there is no automated linkage between the truck and the FY 2014 appropriation used to fund the procurement, though 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.

The task of providing increased transparency has given the Army an opportunity to closely examine many of its systems and processes. Several working groups have been focused on improving programming, finance, contracting, and logistics automation systems. Although implementing permanent solutions will take time, immediate steps have been taken to increase transparency. A secure, online database is now in use that provides HQDA, as well as the ARNG and USAR, the ability to see and manipulate programming and budgeting data real-time as budget exhibits are created. The same database also allows Army programmers, budget analysts, and acquisition specialists to build the ETR online while maintaining full visibility for the ARNG and USAR.

Oversight of the transparency effort is maintained by a multi-component General Officer Steering Committee (GOSC) that meets quarterly and reviews programming, budgeting, procurement, and delivery data. Supporting the GOSC is an Integrated Product Team (IPT) that

ensures budget and procurement documentation is accurate and consistent. The IPT also supervises the on-line data collection effort and prepares the ETR for GOSC review and approval. IPT leadership maintains close working relationships with both OASD/RA and other DOD staff agencies.

The Army fully supports DOD's efforts to increase transparency for the RC and is in full compliance with all directives. The Army also continues its efforts to automate the data collection process and has made significant progress in that area. Along with supporting DOD's transparency efforts, the AC, ARNG, and USAR are also keeping Congress apprised of progress in this area and have provided numerous updates to both Senate and House professional staff members since the transparency effort began in 2008.

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

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.

5. Reset

Reset refers to the Army's imperative to restore balance to re-deployed units in the areas of family, Soldiers, equipment, training, and facilities as units return from operational deployments. The AC and RCs conduct the reset process for 180-days and 365-days, respectively, within the Army's current ARFORGEN model. Units complete reset better prepared and equipped to engage in training for future operations.

Equipment reset is a task within the larger scope of the reset phase. When battle-stressed equipment returns from an overseas contingency operational deployment, it is repaired and refurbished at either the unit-level (field-level) or depot-level (sustainment-level) maintenance facilities. In the case of equipment classified as a non-recoverable battle loss, equipment is replaced via new procurement activities. The Army prioritizes equipment reset activities to ensure that units slated as next to deploy are equipped to meet their operational readiness requirements. The Army's operational readiness requirements ultimately drive equipment reset priorities.

As with the AC, RC equipment reset priorities are currently evolving as the Army simultaneously conducts a withdrawal of forces from Operation Enduring Freedom, restructures the force, and modifies the ARFORGEN model. Within the RC, ARNG units continue to support HD, DSCA, and state missions, and the USAR is adapting to its newly specified role as an operating force and expanded Title 10 responsibilities to support DSCA and HD missions. With consideration given to the fiscally-constrained operating environment, the Army will continue to balance its equipment reset priorities concerning CDU items within MTOE units.

6. What We Bring to the Fight

The ARNG and USAR are full partners with the AC in national defense, meeting the challenges not only of today, but of the future. To meet the future requirements, the Army has significantly accelerated the tempo of transformation and continues to adapt the resourcing processes to become more flexible, dynamic, transparent, and responsive.

The ARNG and USAR have undergone tremendous change in the past eleven years. They have been transformed from strategic reserves to an operational force. They have seen equipping change from a Cold-War paradigm of tiered-readiness, where the RCs were often equipped with obsolete equipment and had significant shortages, to the ARFORGEN structured progression of readiness over time, to produce fully modernized and equipped, trained, ready, and cohesive units. The ARNG and USAR play an essential role in the National Defense Strategy. The ARNG and the USAR served alongside AC units in Iraq and Afghanistan, and they continue to serve along with AC units in any theater. They serve in the Sinai and in the Balkans. The ARNG and USAR provide combat units, combat service support forces, special operations Soldiers, and unique capabilities critical to the Army's success.

F. 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 approximately 1,663 pieces of equipment. To ensure transparency, any new requirements must be accompanied with a memorandum of agreement signed by both the AC and ARNG or USAR and approved by the Secretary of Defense. Repayments are tracked item by item. Supplementary instructions providing Army procedures for implementing the changes are described in DODI 1225.06.

II. Army National Guard Overview

A. Current Status of the Army National Guard

1. General Overview

The Army National Guard (ARNG) support to overseas contingency operations (OCO) in FY 2014 included 4,690 Soldiers for Operation Enduring Freedom in Afghanistan, 3,064 Soldiers in Southwest Asia, 361 Soldiers in Kosovo, 546 Soldiers in Cuba (Guantánamo Bay), 26 Soldiers in Djibouti (Horn of Africa), and 89 Soldiers to other locations. Finally, ARNG supported the United States Army, Southern Command mission to Central America, and 489 Soldiers were mobilized in the continental United States (CONUS).

Top ARNG Focus Areas

- Modernize the ARNG helicopter fleet
- Modernize the ARNG tactical wheeled vehicle fleet
- Procure engineer equipment to fill shortfalls in modernization equipment
- Maintain the ARNG to no less than 80 percent of Critical Dual Use equipment on-hand
- Improve the ARNG command and control capability by focusing on fielding Army mission command systems to ARNG brigade combat teams
- Build essential field-level maintenance facilities to effectively repair, service, and maintain ARNG equipment

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 the overall modernization levels. In 2011, 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 94 percent, an increase from 65 percent in 2006. The MTOE EOH percentages do not include Table of Distribution and Allowance (TDA) requirements that are critical to military occupational specialty schools, Civil Support Teams, pre-mobilization training, states' Joint Force Headquarters, defense support of civil authorities (DSCA), homeland defense (HD) missions, and other requirements. The TDA EOH percentage is currently 64 percent (see Section 2(a) for more detail on MTOE and TDA EOH). Congress' continued support of Army procurement and the Army's continued utilization of the ARNG as an operational force have resulted in significant improvements to the ARNG equipment posture and increased EOH, CDU equipment, and the overall modernization levels.

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

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. The ARNG has wisely used resources to become an operational force that provides capabilities and strategic depth to meet national defense requirements and state needs. The ARNG complements the Active Component (AC), ensuring

the Total Force remains capable of providing trained and ready forces in support of the Nation's security strategy. 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 investment to maintain an operational force when compared to the strategic reserve the Nation had prior to 9/11 is quite modest. However, that investment has more than paid for itself in added responsiveness, flexibility, and readiness resident in a Reserve Component (RC) where 84 percent of the personnel serve in a traditional part-time status. The remaining personnel are either Active Guard and Reserve (AGR) or dual-status Technicians. The training and equipment used to ready the ARNG for overseas service paid dividends here in the United States. Preparation and training for war has made the ARNG extremely effective in responding to domestic emergencies. The ARNG retains the unique capability of providing ready forces with modernized, dual use equipment and effectively manages their use through Mission Command force structure and systems. As an operational force, 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

In 2014, the ARNG performed state missions in response to significant wildfires in Alaska, California, Colorado, Montana, New Mexico, Nevada, Oklahoma, Oregon, Utah, Washington, and Wyoming. During FY 2014, the ARNG performed state missions in response to more than 116 events, including the continued cleanup of the devastation caused by Hurricane Sandy in October 2012. Table 2-1 below provides additional detail.

Table 2-1. Defense Support of Civil Authorities and State Missions

Event Type	Event Amount	Event Type	Event Amount
Key asset protection	2	Search and rescue	55
Law enforcement support	10	Water support	7
Winter storm response	46	Tornado	15
Flood	16	Explosive ordnance disposal (EOD)	29
Special event	12	Southwest border	1
Fire	25	Severe weather	7
Civil Support Team (CST) response	130	Counterdrug	2
Hurricane—Tropical Storm	7	Other	14

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

The ARNG comprises 66 percent of the entire DOD CBRN Response Enterprise (approximately 12,400 ARNG Soldiers and 1,500 Airmen). Ten National Guard Homeland Response Forces (HRFs) are joint task forces composed of both ARNG and Air National Guard personnel. The HRFs are regionally aligned by Federal Emergency Management Agency Region with one in each region to provide a fast, nationally-coordinated CBRN response capability with a 6–12 hour

response time. Each HRF has an embedded CBRN and High-yield Explosives Enhanced Response Force Package (CERFP), the primary lifesaving capability of the National Guard elements of the CBRN Response Enterprise.

The ARNG sources the Command and Control CBRN Response Element Bravo (C2CRE-B). C2CRE-B is a Title-10 Homeland Defense response force. The two star division headquarters consists of 2,251 highly trained Soldiers. When directed by United States Northern Command (USNORTHCOM), C2CRE-B conducts CBRN operations to provide lifesaving, command and control (C2), 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.

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

The USNORTHCOM Concept Plan requires the establishment of DCCs. 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 commanded by a two-star general Dual Status Commander.

The DART mission is split up into DART East and DART West regions of the United States. Each region has a DCC with 10 Full Time Manning Soldiers housed within the Division Headquarters. The DCCs have continued to meet expectations within the Chief, National Guard Bureau (CNGB) and Director, Army National Guard guidance as they demonstrate their value in annual National Level Exercises and preplanned National Special Security Events. Most notably, DCCs facilitated response preparation and coordination between affected states and the National Guard Coordination Center during natural disasters to include various wildfires events, flooding, and mudslides in Washington State.

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

The ARNG participated in 51 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, FY 2014 realized the inclusion of the ARNG in United States Army Forces Command's Regionally Aligned Forces initiative through which the 48th Infantry Brigade Combat Team (Georgia ARNG) provided capabilities to United States Southern Command in support of Counter Transnational Organized Crime with South America. 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 in FY 2014. The National Guard Bureau's State Partnership Program currently has 69 partnerships with a total of 75 partner countries.

2. Status of Equipment

The ARNG continues to align itself to support the Army's full spectrum of operations by focusing on equipment modernization, which improves equipment interoperability within the

ARNG and with the Total Army. With more emphasis on the "right mix" of AC and RC to meet the multitude of missions placed on the Total Army, it is becoming more crucial than ever to ensure multiple-component units and operations can function together without equipment barriers that can potentially render an operation or critical training event impossible to conduct. As a result of these focused efforts and Congress' continued support of Army procurement, the ARNG is more capable than ever to support the Army and our Nation in OCO, homeland defense, and DSCA missions. Over the past year, the ARNG has received over 30,000 new items of equipment.

a. Equipment On-hand

The Army National Guard Equipping Posture, or "EOH Dashboard," is published semiannually, generally in June and December. It provides equipment data for four different areas of concern:

1. Overall-MTOE and CDU-MTOE percentages on-hand and percentages of equipment available for state operations;
2. Current percentage on-hand of CDU equipment broken out by Essential-10 category (or type of mission the equipment supports);
3. Number of new equipment items projected to be distributed over the next 18 months; and
4. Percentage of equipment on-hand that is modernized versus non-modernized, broken out by 11 categories (or types) of equipment.

The EOH Dashboard measures the actual number of items on-hand compared to the number of items authorized. All equipment is measured equally and not weighted in importance based on its capability; consequently, a computer is viewed in the same manner, statistically, as a track vehicle. The intent of the EOH Dashboard is to measure how much equipment the ARNG has on-hand compared to what it is allowed to have. It cannot provide an assessment on the ARNG's capability to meet its missions. However it can provide a better understanding of capability gaps by analyzing the percentages of fill in the Essential-10 categories for CDU and the modernization percentages of what equipment is on-hand. The EOH Dashboard is the result of a collaborative effort among ARNG G-4, ARNG G-8, and HQDA G-8 that provides an equipment common operating picture at both the national and state levels and is used by HQDA and ARNG as a tracking and reporting mechanism.

The June 2014 EOH Dashboard shows the ARNG total EOH to be at 93 percent, which is the greatest percentage the ARNG has experienced since the development of the EOH Dashboard in 2006 when EOH was at 69 percent. The ARNG CDU EOH, a subset of MTOE equipment, increased from 65 percent to 94 percent during this same period. The ARNG continues to manage available resources effectively to support both Federal and state missions. The amount of MTOE equipment available for state operations is at 91 percent; CDU MTOE equipment availability is at 92 percent. In the past, there was a much greater disparity between the percentages of MTOE equipment on-hand and the equipment available for state operations due to numerous mobilizations and deployments. As operations in Southwest Asia draw to a close, there is an expected and corresponding decrease in the number of ARNG units mobilizing for Federal missions overseas as well as a decrease in the demand for units to mobilize with their MTOE equipment. While this is certainly good news, it is essential for the ARNG to continue to maintain the level of equipment readiness it has achieved to fulfill its missions. As in the past,

ARNG EOH percentages will continue to be affected by changing force structure and equipment modernization. Some of these changes will contribute positively to the ARNG's overall capabilities, while others will have the potential to have serious repercussions. Continued focus on equipping the force with the best available equipment, in the right places, at the right time, and at the least cost will result in a more ready and modern Reserve force.

i. Table of Distribution and Allowances Unit Equipment

The EOH percentage quoted above, as obtained from the June 2014 EOH Dashboard, does not include TDA requirements that are critical to Regional Training Institutes, military occupational specialty producing schools, Civil Support Teams (CST), pre-mobilization training, states' Joint Force Headquarters, ARNG Aviation Support Facilities, and other ARNG missions. Additionally, some TDA equipment is critical in performing HD and DSCA missions. Such units include state Joint Force Headquarters, which consist of the adjutant generals and their staffs who provide command and control support for state missions. CSTs are also TDA units, and there are currently 57 CSTs throughout the United States. CSTs are required to deploy to provide assistance to local first responders in determining the nature of an attack and to provide expert response advice. TDA units require modernized equipment to train other units, which contributes to the readiness and availability of ARNG units. TDA units are usually a lower priority for fielding new equipment, although they may have a Program of Instruction to train aviators, mechanics, and other operators on modernized equipment; but in many cases the TDA organizations inherently have older generation equipment and more shortages as they compete for resources and funding that will continue to shrink.

ii. Equipment Cross-leveling

The cross-leveling of equipment positively affects 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. For FY 2014, 2,662 directives for 7,699 items valued at $211M were transferred between states through Standard Army Retail Supply System. Another 284 directives for 793 items valued at $39.5M were transferred through Global Combat Support System – Army (GCSS-Army). Distribution of Non-excess equipment between states is done for mobilizations or other high priority events based on leadership guidance. This action resulted in 58 directives for 236 items valued at $10.3M.

iii. DOD Instruction 1225.06-Equipment Transfer to Contingency Operations

The ARNG continues to track the equipment transferred over the past decade from units re-deploying out of theater to units deploying to theater to support various urgent warfighter needs. As HQDA staff identifies equipment requirements, ARNG coordinates with HQDA staff to best meet the needs of the combatant commanders and the Army. DODI 1225.06, *Equipping the Reserve Forces*, provides greater transparency and traceability controls over RC equipment transfers. This includes transfers from one component to another, transfers within a component, as well as equipment inducted into maintenance facilities. Additionally, the instruction provides enhanced reporting requirements to provide enhanced 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.

b. Average Age of Major Items of Equipment

The average age of ARNG equipment at the beginning of FY 2015 is provided in *Table 2 Average Age of Equipment.* An increase in manufacture and recapitalization programs through FY 2014 alleviated the historical issue associated with aging equipment. In the past, the ARNG received much of its equipment through the cascading actions of the AC, and this 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 ARNG needs. There is a direct correlation between procurement and depot maintenance budgets. If the current budget level remains the same, the average age of the fleet will continue to decrease; otherwise the average age will increase.

c. Equipment Modernization

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's and Chief of Staff of the Army's strategic vision of obtaining and utilizing the "right mix" of AC/RC units to meet Federal missions—and being ready to do so quickly. In June 2013, adjustments made to the modernization "cut" levels of several equipment items resulted in the ARNG's overall EOH modernization percentage increasing from 70 to 85 percent. As of June 2014, the ARNG's overall EOH modernization percentage increased eight percentage points to 93 percent, exactly in line with the percentage of equipment on-hand versus equipment authorized.

i. High Mobility Multipurpose Wheeled Vehicle (HMMWV)

The ARNG is keeping legacy HMMWVs in the inventory to fill requirements and prevent capability gaps while experiencing shortages in modernized HMMWVs no longer being procured. However, FY 2013 Congressional funding provided to the ARNG as part of a multi-year program to modernize the rapidly-aging HMMWV fleet is being used to upgrade the oldest up armored HMMWVs. These newly upgraded HMMWVs will have a positive effect on ARNG equipment readiness, which will be evident as early as FY 2015 as the first of these vehicles get returned to the donor units.

ii. Simple Key Loader (SKL)

Further improvement in communications capability will be seen as fielding of equipment such as the SKL, being used to fill critical shortages in communications equipment. The SKL will bring the ARNG to 60 percent fill (the maximum fill objective), a significant improvement to the

current 45 percent fill. The SKL is used for communications gear that provides the capability for secure transmissions and is replacing outdated technology.

iii. Single Channel Ground and Airborne Radio System (SINCGARS)

The SINCGARS Radio Transmitter "swap," also currently in progress, is exchanging older, legacy models (the A and D models) for newer and more modern E and F models, which significantly improves interoperability.

d. 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 that are designed to ensure the most accurate accountability of equipment. The quarterly Campaign on Property Accountability report, the semiannual Excess Equipment report, and the monthly General Equipment follow-on testing are three examples. As a result, there are zero ARNG states or territories that have more than 2 percent excess of their total equipment inventory. The ARNG current average is .41 percent, which is below the ultimate goal of .5 percent or less. The ARNG has made tremendous strides toward more accurate inventory management and increased equipment readiness.

e. 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 analyses 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.

f. Maintenance Issues

i. Field-Level Maintenance

Many ARNG shop facilities are more than 50 years old and are neither designed nor equipped to provide a safe, environmentally-friendly workplace, capable of meeting the demands of the Army's two-level maintenance doctrine to support and maintain a modern and complex, up-armored vehicle fleet. The Military Construction funding required for modernizing ARNG surface equipment maintenance facilities is conservatively estimated at $2.22B according to the ARNG Installation Division Planning Resource for Infrastructure Development and Evaluation database. Field-level maintenance 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 meeting current construction criteria to effectively repair, service, and maintain our operational force's equipment.

ii. National-Level Maintenance

Continued funding of the ARNG Surface Depot Maintenance Program is key to maintaining the readiness of the ARNG fleet. As an integral part of ARNG's sustainment activities, the depot overhaul and rebuild programs sustain ARNG EOH and extend the service life of its fleet.

ARNG sustainment activities thereby decrease operational tempo spending. The current ARNG Depot Maintenance Program funding level is $233M. This is 59.2 percent of the ARNG critical requirement of $394M in FY 2014. Planned reductions in the Depot Maintenance Program in FY 2014 and across the FY 2016–FY 2020 budget will significantly affect the program.

iii. Home Station Reset

Under the Home Station Reset program in FY 2014, the ARNG continued to restore equipment returning from Operation Enduring Freedom, Horn of Africa, and Guantanamo to Technical Manual 10/20 standards within 365 days of the unit's return to home station. In FY 2014, the ARNG Home Station Field Level Reset Program (subset of Home Station Reset) completed the reset of 144,500 pieces of equipment.

iv. Automatic Reset Induction (ARI)

Units redeploying from theater are required per HQDA to induct 100 percent of identified ARI equipment items into Sustainment Maintenance prior to redeployment to the CONUS. The return of the equipment inducted into ARI is critical for the National Guard to keep a high state of readiness and accomplish the National Guard's state missions.

g. Other Equipment Specific Issues

Congress and the Army have made great strides in equipping the ARNG to the levels needed to be successful in 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.

3. Transparency

The Army continues in its commitment to ensure equipment transparency including accountability, traceability, and reporting from procurement planning to delivery to the Reserve Component. Process improvements are being identified to ensure transparency incorporating traceability from funding, procurement, production, delivery, and fielding to individual unit level. A key component of the Army's effort will be to establish an automated transparency process. The Army expects the development and implementation of Item Unique Identification (IUID) coding and system implementation to provide the automated means necessary to trace delivery of equipment to the funding year and appropriation from which it was resourced. Once fully operational, IUID will be in the final piece necessary to enable information sharing between various systems in the acquisition process. The IUID system is currently scheduled to become fully operational by 2017.

B. Changes since the Last NGRER

1. Preserving the Operational Army National Guard

The Army Strategic Planning Guidance states the Army's determination to advance the capabilities gained over the last 11 years and leverage capacity and capabilities of the Total Force—Active, Guard, Reserve, and Civilian—ensuring that both the operational and generating forces are optimized and aligned to support DOD and Army strategic priorities. To that end, the Director, ARNG indicated his determination to maintain the ARNG as an operational force through the Army National Guard Strategic Imperatives, September 2012. 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.

A key component of maintaining an operational reserve is forecasting regular use of the force through a progressive readiness model, such as ARFORGEN, which prepares Soldiers and units for deployment every five years. This gives Soldiers, their families, and civilian employers the predictability they need to plan their civilian lives and careers while developing critical military skills exercised through tough, realistic training, and operational employment. Additionally, the ARNG must continue to field, sustain, and train on modernized equipment. Future Army funding priorities for procurement and sustainment must ensure that the RC equipment is ready and modernized concurrent with the AC. Equipping and modernizing the ARNG on par with the AC will ensure readiness, support an operational force, and promote interoperability.

The Total Army adheres to one standard. Whether a unit is in AC, ARNG, or Army Reserve, the Army priority for equipping is to units scheduled for mission deployment or employment first, regardless of component. If not identified as a next to deploy or employ force, the challenge for RC units within a 5-year force generation cycle is sufficiency of resources to fully realize progressive readiness. These units are consistently and predictably equipped but less frequently than the AC, based upon 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 2018. 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, UH-60 Blackhawk modernization, general engineering equipment, chemical/biological protective shelters (CBPS), semitrailers, and HMMWV ambulance modernization shortages are high priorities.

C. Future Years Program (FY 2016–FY 2018)

The cumulative effect of sequestration and the current fiscal environment, to include the current Aviation Restructuring Initiative (ARI), will challenge the Army to consistently and predictably provide equipment to the RC. Army procurement funding is expected to trend downward across the Future Years Defense Program (FYDP). Currently, the ARNG is programmed to receive approximately $5.2B in FY 2016–FY 2018 in future years base funding; these figures include $1.56B in FY 2016, $2.0B in FY 2017, and $1.65B in FY 2018. 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 2016 President's Budget submission. The foremost risk pertaining to equipping is the continued appropriation of equipping resources by Congress to ensure equipment modernization, recapitalization, reset, and

repair requirements are fulfilled. Funding must be appropriated and obligated in sufficient quantities through FY 2032 to maintain required standards of equipping readiness to assure victory in future conflicts.

1. Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2016–FY 2018 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 2016–FY 2018.

b. NGREA Procurements

National Guard and Reserve Equipment Appropriation (NGREA) funding has been used to successfully mitigate key ARNG shortfalls in equipment and modernization efforts. ARNG FY 2014 NGREA funding has allowed the investment of more than $175.6M in aviation, engineering, and logistics systems. In addition, $17.4M of NGREA funding was used to procure systems that enhance HD and DSCA missions. The ARNG has also invested $80.6M of NGREA funding for the procurement of simulators and training systems that support both individual and collective training. Although these purchases do not include all of the procurements that were made possible by FY 2014 NGREA funding, it does reflect 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 CNGB to comply with the required new equipment delivery certification requirement.

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 DARPL. 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

While modernization levels overall are good, and within one percent of AC levels, there are nevertheless 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 CBPS and general engineering equipment consisting of firefighting support and construction equipment.

The equipment item listings 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. The narratives with Portfolio tables contain select items of equipment with fill percentages below 90 percent.

a. Maneuver Portfolio

The Maneuver Portfolio supports several families of combat systems including Abrams Tanks, Bradley Fighting Vehicles, Stryker Vehicles, and Hercules Recovery Vehicles. The projected FY 2016 status shows the Abrams Tank at 100 percent EOH fill with two Armor Brigade Combat Teams (ABCTs) and one Tactical Combat Formation (TCF) Combined Arms Battalion (CAB) modernized to the A2 System Enhanced Package variant, and five ABCTs and two TCF CABs upgraded to the A1 Abrams Integrated Management Situational Awareness variant. The Bradley Fighting Vehicles are at 100 percent fill, with five of seven ABCTs and all three TCF CABs modernized to the A2 Operation Desert Storm–Situational Awareness variant, and two ABCTs equipped with the A3 variant; the Strykers are at 88 percent fill; and Hercules are 100 percent fielded with gradual upgrades to the A2 (digital) variant taking place.

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), 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. Full funding is planned to fill remaining shortages and continue to modernize the Soldier Portfolio systems. EOH is strong with an emphasis on modernization and correction of documentation.

c. Air and Missile Defense Portfolio

Air and Missile Defense (AMD) is the highest priority to homeland defense, vital to the Army's core competencies of combined arms maneuver and point area defense security. More significantly, the Army is designated to conduct both air and missile defense in support of joint campaigns (see Table 2-2).

Table 2-2. Air and Missile Defense Portfolio

System	Required Quantity FY 2016	On-hand Quantity FY 2016	Percent Fill	Funding Shortfall
Air and Missile Defense Planning and Control System (AMDPCS)	4	3	75%	$24M
Improved Sentinel Radar / Mode 5	82	82	100%	$0
Air Defense Airspace Management System (ADAM)	75	75	100%	$0

Today, ARNG AMD units support the National Capital Region's Integrated Air Defense System that defends our Nation's capital against cruise missiles and unmanned aerial vehicles and also provide manning for Ground-based Midcourse Defense systems deployed in Alaska, Colorado, and California to deter and defeat intercontinental ballistic missile attacks on our homeland. ARNG AMD units regularly protect designated special security events such as major sporting events or political and international 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 Ballistic Missile Defense System architecture.

d. Aviation Portfolio

The Aviation Portfolio includes all ARNG fixed-wing, rotary-wing, unmanned aircraft systems, 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. Other modernization efforts are generally on track with the exception of the H-60 Mission Design Series; budget funding reductions will decrease H-60L transfers from the AC. The ARNG operated 389 H-60A, 345 H-60L, and 101 H-60M in FY 2014. Army H-60A divestment is scheduled for FY 2025. H-60M buyout is forecasted for FY 2028. The ARNG is scheduled to receive H-60Vs ahead of the USAR when production begins, currently scheduled for 2018 with the first delivery in 2019. The ARNG AH-64D fleet will be Block II-pure in FY 2017. Bulk procurement of Common Tool Kits and other initiatives

fill chronic shortages and highlight AGSE modernization. The modernized UH-60M fleet and future UH-60V will require additional flight simulators to support those aviators and maintainers in units and in ARNG training institutions. 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.

Table 2-3. Aviation Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Funding Shortfall
UH-60 Blackhawk (Modernization)*	556	425	76%	$708M
UH-72 Lakota*	212	212	100%	$0
AH-64 Apache	192	177	92%	$376M
CH-47 Chinook (Modernization)*	75	83	110%	$0
RQ-11B Small UAS	982	673	68%	$39.1M
AGSE (54 line items)*	15,674	10,195	65%	$33.5M

* Indicates CDU item.

e. Fire Support Portfolio

The Fire Support Portfolio consists of all fire support and related systems. The ARNG is fully funded for the fielding and modernization of cannons/howitzers/rockets in support of the Force Design Update. Funding supports the improved armor cab, enhanced fire control capability, enhanced long range communications, cannon digitization, and additional M777A2s Howitzers as Army Brigade Combat Teams (BCT) restructure to the BCT 2020 design. Force structure changes resulted in the completed fielding of the M1200 Armored Knight in FY 2014. The Lightweight Laser Designator Rangefinder will be 90 percent fielded by FY 2016 as 2H modernization process continues. The key challenges to full readiness of this portfolio are the Q-53 Firefinder Radar and Q-50 Lightweight Counter-Mortar Radar. Legacy radars (Q-36 and Q-37) are modernized as much as possible and fielded to 85 percent of authorization; fielding date of the Q-53 is uncertain as we are awaiting Full Materiel Release. The Q-50 has entered full-rate production with 100 percent fielding projected to occur later in this decade.

f. Mission Command Portfolio

The Mission Command Portfolio consists of the Army digital C2, communication, computer, and intelligence systems. Joint Capabilities Release–Blue Force Tracker (JCR-BFT) is the key situational awareness and C2 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 (see Table 2-4). 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 Warfighter Information Network-Tactical (WIN-T) Increment 2 and Capability

Set equipment. More importantly, this could affect the ARNG operability and communication with other ARNG units and units in different components.

Table 2-4. Mission Command Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
Blue Force Tracker (vehicle) C18378	25,290	20,478	81%	$76.7M

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 chemical/biological protective shelter (CBPS), M8 and M8E1 systems are CDU items used for homeland response missions. Delivery of eight M8E1 systems for the ARNG is scheduled for FY 2015 (see Table *2-5*).

Table 2-5. NBC Force Protection Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
CBPS*	293	8	3%	$251M

* Indicates CDU item.

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 (SIGINT)/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. The ARNG Prophet equipment shortfall (see Table 2-6) is due to CONUS fielding delays associated with recent theater priorities. The ARNG is scheduled to receive five additional systems (5 control vehicles and 15 sensors) in FY 2015 from deactivating AC units. These systems are critical for maintaining and developing the highly-perishable skills associated with the SIGINT Analyst and Cryptologic Linguist occupational specialties.

Table 2-6. IEW Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
Prophet Control Vehicle	29	19	66%	$3.2M
Prophet Sensor	71	60	85%	$15.4M

i. Mobility Portfolio

The Mobility Portfolio is comprised of construction and mobility assurance systems and the ARNG currently has 45 percent of the total Army Engineer force structure. The Family of Boats and Motors is currently under contract with fielding tentatively scheduled for FY 2016–FY 2018. The Water Well Drill Rig has been fielded with two systems being sent to the Afghanistan and African theaters in support of combatant commander operational needs. The ARNG contains 100 percent of the force structure for the Water Well Drill Rig and is currently expecting to receive the two deployed systems once they return to CONUS and complete reset at Sierra Army Depot. Mobility systems include countermine and bridging systems. Shortfalls exist due to modernization of equipment, not shortages of EOH. The Mobility Portfolio utilizes a mix of programmed funds (see Table 2-7).

Table 2-7. Mobility Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
Water Well Drill Rig	6	2	33%	$8.0M
Zodiac 15 Passenger Boats*	371	156	42%	$2.6M
Outboard Motor Gasoline: 40 Brake Horsepower (bhp)*	122	22	18%	$69.0K
Outboard Motor Gasoline: 35hp Silenced Waterproofed*	369	64	17%	$759.0K
Armored Vehicle Launched Bridge (AVLB)	90	0	0%	$27.4M
Medium Mine Protected Vehicle (MMPV) Type I	205	58	28%	$102.0M

* Indicates CDU item.

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.

Table 2-8. CSS Quartermaster, Ordnance, and Medical Systems

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
2K gal. Water Tank-Rack (HIPPO)*	1,134	452	39%	$89.0M
Assault Kitchen*	964	401	42%	$29.6M

* Indicates CDU item.

k. CSS Transportation Portfolio

The CSS Transportation Portfolio consists of Light Tactical Vehicles, Medium Tactical Vehicles (MTV), Heavy Tactical Vehicles (HTV), and Tactical Cargo Trailers. Significant Army and NGREA funds have contributed significantly to ARNG increased 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. The ARNG will seek to invest additional funds in palletized load systems and 34-ton and 25-ton semitrailers as the Army develops the required acquisition contracts.

HMMWVs are critical command and control and transportation assets during domestic operations. The ARNG is excess of the FY 2018 HMMWV requirement (see Table 2-9). The HMMWV fleet consists of 43 percent up-armored HMMWVs, which is the most modern HMMWV in the Army. The ARNG is purchasing 500 HMMWV Ground Ambulances with FY 2010 NGREA funding. Upon delivery, the ARNG will achieve 100 percent of its ambulance requirement. Unfortunately, over 70 percent of the ground ambulance fleet is over 20 years old and requires recapitalization to extend their service life. Ground ambulances are critical assets to the ARNG's Federal and state missions. The ARNG will continue seeking opportunities to modernize the ambulance fleet. The ARNG MTV fleet is 100 percent filled and 60 percent of the fleet is comprised 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. Key Army Decision Points in FY 2016 will be to determine a recapitalization or replacement strategy for the first generation FMTVs that are approaching 16 years of service life. Adequate future funding will be critical to ensuring the ARNG's MTV fleet does not return to previously low modernization levels.

The 25-ton and 34-ton Semitrailers both have shortages Army-wide, and there is currently no planned solution. The Palletized Loading System (PLS) is in sustainment, and no new purchases will be made; however, a PLS recapitalization program is in place.

Table 2-9. CSS Transportation Portfolio

System	Required Quantity (FY 2016)	On-hand Quantity (FY 2016)	Percent Fill	Equipment Shortfall
Semitrailer: Flatbed 34-ton	4,358	3,729	86%	$113M
Semitrailer: Low-bed 25-ton	726	208	29%	$96M
Palletized Loading System (PLS) M1075A1	2,131	1,646	77%	$190M
HMMWV Ground Ambulance*	1,716	1,876	100%	$0M

* Indicates CDU item.

D. Summary

Over the last 378 years, the men and women of the ARNG have defended our Nation and communities. At one time a strategic reserve, today the ARNG is an operational force that supports the full spectrum of domestic and global response. The ARNG's integration into over 2,600 communities across the United States and its territories gives the Nation a robust military

capability at the least possible cost. As a result of Congress' funding during war, the equipment readiness of the ARNG is at historically high levels. Our challenge, with overseas contingency operations coming to a close and fiscal constraints tightening, is to equip and modernize the ARNG to keep it on par and on pace with the AC, with particular emphasis on M1 Abrams and M2 Bradley modernization and the Aviation Reorganization Initiative.

Protecting previous investments in an operational ARNG requires continued fiscal diligence. The bill to the American taxpayer will rise if modernization is allowed to wane, as it is more expensive to simply exist with outdated equipment that requires constant maintenance and upkeep expense. Through these efforts, the ARNG will continue to provide same-trained and same-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 2016 unit cost estimates are provided by the Military Departments.

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Air Defense							
Center Communications Operations: AN/TSQ-253(V)5	C17156	$1,683,867	3	3	3	3	6
Center Communications Operations	C18033	$3,000,000	52	55	58	58	82
Computer: Tactical AN/GYQ-88	C77755	$60,345	170	170	170	170	182
Center Communications Operations: AN/TSQ-253(4)	C77942	$1,683,867	1	1	1	1	1
Center Communications Operations: AN/TSQ-253(V)3	C78135	$5,099,756	2	2	3	3	4
Center Communications Operations: AN/TSQ-253(V)2	C78192	$7,125,165	2	2	4	4	6
Command System: Tactical	C91673	$2,000,000	33	33	33	33	72
Fire Unit Vehicle-mtd: Avenger	F57713	$1,090,277	255	255	255	255	252
Radar Set: Sentinel AN/MPQ-64	G92997	$3,500,000	41	41	41	41	6
Aircraft							
Aerial Scout Helicopter: OH-58D	A21633	$4,075,800	26	26	26	26	30
Airplane Cargo Transport: C-12D	A29812	$1,967,301	8	8	8	8	1
Airplane Cargo Transport: C-23B	A29880	$7,424,158	0	0	0	0	10
Airplane Cargo Transport: C-12F *	A30062	$3,068,422	23	23	23	23	45
CH-47F Improved Cargo Helicopter *	C15172	$30,000,000	69	70	76	76	171
Helicopter Advanced Attack: AH-64A	H28647	$10,680,000	0	0	0	0	20
Helicopter Cargo Transport: CH-47D *	H30517	$5,000,000	103	103	103	103	6
Helicopter Electronic Countermeasures: EH-60A	H30616	$5,544,861	1	1	1	1	0
Helicopter Light Utility (LUH) UH-72A *	H31329	$3,900,000	194	194	194	194	210
Helicopter Utility: EUH-60L	H31595	$6,529,538	2	2	2	2	0
Helicopter Utility: UH-60L *	H32361	$4,855,000	316	365	401	437	372
Helicopter Utility: UH-60M *	H32429	$8,000,000	65	83	97	102	223
Helicopter Attack: AH-64D	H48918	$25,128,800	175	175	175	175	192
Helicopter Observation: OH-58A	K31042	$92,290	44	44	44	44	16
Helicopter Utility: UH-1H	K31795	$922,704	0	0	0	0	5
Helicopter Utility: UH-60A *	K32293	$4,635,000	409	409	409	409	135
Tactical Unmanned Aerial Vehicles System: Shadow	T09343	$2,000,500	32	32	32	32	30
HH-60L: MEDEVAC Helicopter *	U84291	$7,908,000	13	13	13	13	0
Aviation							
Aircraft Data Rate Adapter (ADRA) Unit: CV-3885	A29082	$3,595	1	1	1	1	0
Survival System, Aircraft Personnel	BB8056	$7,105	242	242	242	242	0
Helicopter Internal Cargo Handling System (HICHS) CH-47	H31079	$149,967	29	29	29	29	43
Forced Entry and Rescue Equipment Set: Aircraft Crash *	H88468	n/d	44	44	44	44	140
Tool Kit: Aircraft Crash Rescue *	L27293	$829	261	261	261	261	301
Launcher Rocket Aircraft: 2.75-inch 19-tube M261	L45131	$8,050	455	455	455	455	430
Launcher Rocket Aircraft: 2.75-inch 7-tube M260	L45199	$7,460	57	57	57	57	60

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Oxygen Service Unit Airmobile: 8-Bottles Max	N40783	$6,897	4	4	4	4	0
Peculiar Ground Support Equipment: Deployment Support Kit	P05012	$59,700	87	87	87	87	0
Survival Kit Aircraft: Basic 4-Person	S72693	$1,213	815	815	815	815	996
Survival Kit Aircraft: (2-Man) Aircraft Modular Survival System (AMSS)	S72943	$928	251	251	251	251	414
Tester: Pitot and Static Systems TS-4463/P *	T03597	$48,845	219	219	219	219	270
Sling Cargo Aerial Delivery: 500-lb Capacity Type A7A *	T76903	$60	236	236	236	236	188
Sling Cargo Aerial Transport: w/Multiple Leg Sling	T80571	$862	5	5	5	5	0
STABO Extraction Harness System	U16457	$612	9	9	9	9	24
M279A1 Launcher Guided Missile Aircraft	Z05122	n/d	0	0	0	0	27
Battle Command (Command and Control)							
BCCS Short Stack Command System: AN/TYQ-146(V)2	B49350	$83,837	4	4	4	4	0
Battle Command Common Services (BCCS) CPOF Stack AN/TYQ-146	B73507	$96,666	4	4	4	4	0
Computer Set: Digital AN/UYK-128(V)1	C05069	$15,954	787	787	787	787	717
Computer Set: Digital AN/GYK-62B *	C13866	$16,000	813	813	813	813	1,018
Computer System: Digital AN/UYQ-90(V)2 *	C18278	$5,650	7,927	7,927	7,927	7,927	14,948
Computer Set: AN/UYK-128(V)3 *	C18378	$15,954	15,736	15,736	15,736	15,736	25,951
Computer System: Digital AN/GYK-61 *	C18448	$11,500	2,341	2,341	2,341	2,341	2,187
Computer System: Digital AN/PYQ-12	C18641	$8,120	447	447	447	447	487
Computer System: Digital AN/PYQ-16	C18891	$11,599	202	202	202	202	168
Computer System: Digital AN/PYQ-13 (GCCS-A)	C27588	$3,497	198	198	198	198	208
Computer System: Digital *	C27963	$4,612	4,221	4,221	4,221	4,221	5,190
Command System Tactical *	C40996	$412,035	258	258	258	258	243
Command and Control System: AN/GYQ-93(V)4	C41398	$32,000	1	1	1	1	0
Command and Control System: AN/GYQ-97A	C56327	$55,000	20	20	20	20	17
Command System Tactical: AN/TYQ-146(V)1	C61222	$141,243	2	2	2	2	0
Command System Tactical: AN/TYQ-155 (V)1 *	C61290	$89,057	404	404	404	404	414
Command Center System: AN/TSQ-243	C61665	$80,000	526	526	526	526	542
Computer System: Digital AN/PYQ-6C	C67436	$6,810	29	29	29	29	0
Communication Subsystem: AN/TSQ-259 *	C88821	$141,983	484	484	484	484	405
Computer Set: Digital FBCB2	FJ1007	$12,000	297	297	297	297	0
Computer Set: AN/UYK-128(V)2	FJ1013	$15,954	6	6	6	6	0
Generator Set: DED 10kW 50/60Hz Skid-mtd	G07461	$19,912	88	88	88	88	1,944
Generator Set: DED 5kW 60Hz Skid-mtd *	G11966	$12,798	2,095	2,095	2,095	2,095	787
Generator Set: DED 60kW 50/60Hz Skid-mtd *	G12034	$25,073	350	350	350	350	192
Generator Set: DED 15kW 50/60Hz Skid-mtd *	G12170	$20,000	277	277	277	277	29
Generator Set: DED TM 60kW 400Hz PU-806 Chassis	G17460	$49,182	17	17	17	17	2
Generator Set: DED MEP807A	G17596	$67,000	5	5	5	5	1
Generator Set: DED MEP809A	G17664	$75,000	0	0	0	0	3
Generator Set: DED 60kW 400Hz Skid-mtd *	G18052	$28,425	12	12	12	12	6
Generator Set: DED 3kW 60Hz Skid-mtd *	G18358	$9,922	6,570	6,570	6,570	6,570	7,020
Generator Set: DED Trailer-mtd (TM) PU-803 *	G35851	$38,418	378	378	378	378	24
Generator Set: DED TM PU-804	G35919	$42,197	1	1	1	1	0

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Generator Set: DED 28V DC MEP-501A *	G36169	$6,000	73	73	73	73	35
Generator Set: DED 60Hz AC MEP-531A *	G36237	$6,000	2,495	2,495	2,495	2,495	2,529
Generator Set: GTE 60kW 400Hz Wheel-mtd SP	G40629	$241,643	0	0	0	0	3
Generator Set: DED TM 10kW 60Hz *	G42170	$25,757	1,527	1,527	1,527	1,527	46
Generator Set: DED TM 5kW 60Hz *	G42238	$23,738	1,118	1,118	1,118	1,118	667
Generator Set: DED 5kW 50/60Hz Skid-mtd	G42488	$18,716	53	377	700	922	1,255
Generator Set: DED 15kW 50/60Hz Skid-mtd	G49966	$20,949	5	5	5	5	199
Generator Set: DED 10kW 400Hz mtd on M116A2 PU-799 *	G53403	$30,472	28	28	28	28	2
Generator Set: DED TM PU-802 *	G53778	$20,415	1,230	1,230	1,230	1,230	53
Generator Set: DED 60kW 400Hz Skid-mtd	G62960	$29,793	1	1	1	1	0
Generator Set: DED 60kW 50/60Hz Skid-mtd	G63256	$26,956	3	3	3	3	176
Generator Set: DED 30kW 50/60Hz Skid-mtd *	G74575	$26,705	95	95	95	95	97
Generator Set: DED 30kW 400Hz Skid-mtd	G74643	$24,334	3	3	3	3	2
Generator Set: DED 10kW 60Hz Skid-mtd *	G74711	$14,345	1,923	1,923	1,923	1,923	144
Generator Set: DED 10kW 400Hz Skid-mtd *	G74779	$15,304	82	82	82	82	64
Generator Set: DED 10kW 400Hz Skid-mtd	G75018	$21,273	6	6	6	6	12
Generator Set: DED 30kW 50/60Hz Skid-mtd	G75200	$22,046	0	0	0	0	2
Generator Set: DED TM 60kW 50/60Hz PU-805 Chassis *	G78306	$44,185	228	228	228	228	45
Generator Set: DED TM 15kW 60Hz *	G78374	$19,455	140	140	140	140	4
Generator Set: DED TM 100kW 60Hz mtd on M353 PU-495	J35801	$44,776	7	7	7	7	4
Generator Set: DED 100kW 50/60Hz Tactical Utility	J38712	$10,541	3	3	3	3	18
Generator Set: DED 200kW 60Hz Skid Tactical Precise	J40150	$19,204	0	0	0	0	1
LTT Trailer-mtd: PU-2001 5kW 50/60Hz	L26934	$42,208	61	61	61	61	576
LTT Trailer-mtd: PP-3001 5kW 50/60Hz	L27002	$69,552	1	1	1	1	10
LTT Trailer-mtd: PU-2002 10kW 50/60Hz	L84622	$43,721	83	83	83	83	1,633
LTT Trailer-mtd: PU-2003 15kW 50/60Hz	L84690	$45,033	9	9	9	9	146
Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-35 *	P28083	$46,322	95	95	95	95	70
Power Plant: Electric DED TM 5kW 60Hz AN/MJQ-36	P28151	$46,257	5	5	5	5	8
Power Supply: PP-6224/U *	P40750	$4,322	3,126	5,126	6,926	6,926	11,095
Power Plant: Electric TM 30kW 50/60Hz AN/MJQ-40 *	P42126	$85,594	103	103	103	103	57
Power Plant: Electric TM 60kW 50/60Hz AN/MJQ-41 *	P42194	$96,819	64	64	64	64	66
Power Plant: Diesel TM 10kW 60Hz AN/NJQ-37 *	P42262	$50,294	158	158	158	158	133
Power Plant: Utility (Medium) *	P63394	$220,631	179	179	179	179	159
Power Plant: Utility (Medium) *	P63462	$135,000	1,699	1,699	1,699	1,699	1,461
Power Plant: Electric DED TM	P63530	$53,500	190	190	190	190	26
Trailer-mtd: PP-3102 10kW 50/60Hz M200A1	T39849	$72,145	9	9	9	9	51
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	$95,834	6	6	6	6	47
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	$45,545	20	20	20	20	339
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	$44,157	73	73	73	73	1,346
Trailer-mtd: PP-3003 15kW 50/60Hz	T49579	$93,924	26	26	26	26	162
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	$58,622	13	13	13	13	76
Trailer-mtd: PU-2113 60kW 400Hz M200A1	T93368	$43,751	1	1	1	1	0
Computer Set: Digital AN/UYK-128B(V)3	Z757FD	n/d	289	314	314	314	0

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Computer Set: Digital AN/GYK-62G Command Post (TOC)	Z758FD	n/d	29	31	31	31	0
Battlespace Awareness							
Detecting System Countermeasures: AN/MLQ-40(V)4	D04182	$887,771	23	23	23	23	96
Data Analysis Central: AN/MSW-24	D77801	$318,673	9	9	9	9	34
Battle Command Transport Networks							
Battalion Command Post (Switching Group): OM-XXX *	B67234	$8,838	515	515	515	515	521
Communication Subsystem: AN/USQ-165	C05001	$33,105	7	7	7	7	35
Central Office: Telephone Automatic AN/TTC-56(V)3	C20617	$725,000	10	10	10	10	16
Frequency Hopping Multiplexer: TD-1456VRC	F99520	$28,547	672	672	672	672	1,102
Radio Set: AN/PRC-148	FA100W	$3,026	2,870	2,870	2,870	2,870	0
Radio Terminal Set	FA9513	$695	6	6	6	6	0
Joint Node Network (JNN) Central Office Telephone Auto *	J05001	$725,000	157	157	157	157	161
MBITR: Urban Version *	M18029	$8,987	1,245	1,245	1,245	1,245	2,153
MBITR: Maritime Version	M27045	$12,400	219	219	219	219	214
Net Control Station: AN/TSQ-158	N04580	$390,885	4	4	4	4	4
Radio Set: AN/VSQ-2D(V)1	P49587	$39,373	1,123	1,123	1,123	1,123	1,196
Radio Set: AN/VSQ-2D(V)2	P99724	$41,336	93	93	93	93	279
Radio Test Set: AN/GRM-122 *	R36178	$36,070	665	665	665	665	671
Radio Set: AN/VRC-89F(C) *	R44999	$11,128	3,278	3,278	3,278	3,278	5,754
Radio Set: AN/VRC-92F(C) *	R45543	$13,446	12,835	12,835	12,835	12,835	15,002
Radio Set: AN/VRC-111	R45778	$42,840	7	7	7	7	0
Handheld Type 1 Radio *	R55336	$4,800	12,272	12,272	12,272	12,272	2,274
Radio Set: AN/VRC-87F(C) *	R67296	$6,532	686	686	686	686	759
Radio Set: AN/VRC-88F(C) *	R67330	$7,123	1,070	1,070	1,070	1,070	1,314
Radio Set: AN/VRC-90F(C) *	R68044	$7,415	38,039	38,039	38,039	38,039	56,535
Radio Set: AN/VRC-91F(C) *	R68146	$11,817	7,138	7,138	7,138	7,138	11,369
Radio Set: AN/VSQ-2D(V)4	R78005	$81,374	2	2	2	2	2
Radio Set: AN/PRC-119F(C) *	R83141	$4,346	7,436	7,436	7,436	7,436	9,416
Radio Terminal: LOS Multi-channel AN/TRC-190C(V)1 *	R90451	$197,800	378	382	382	382	402
Radio Terminal: LOS Multi-channel AN/TRC-190C(V)3 *	R90587	$276,747	203	205	205	205	209
Radio Set: Grid Reference AN/GRC-229D	R91580	$51,067	0	0	0	0	6
Teleconference System: AN/TYQ-122 *	T43146	$21,000	156	156	156	156	283
Radio Terminal Line of Sight Multi-channel: AN/TRC-190E(V)3	Z01314	n/d	23	23	23	23	0
Radio Set: AN/PRC-155(V)1	Z01608	n/d	0	55	505	1,321	0
Radio Terminal Line of Sight Multi-channel: AN/TRC-190D(V)1	Z01751	n/d	40	40	40	40	0
Airborne Maritime Fixed - Maritime Fixed (AMF-MF)	Z603FD	n/d	68	111	158	237	0
Combat Mobility							
Assault Breacher Vehicle (ABV)	A05001	$2,599,000	12	12	12	12	42
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	$128,537	155	155	155	178	174
SOF Demolition Kit: M303	S93791	$5,000	111	158	188	246	155
Tool Kit: Urban Operations	T30195	$60,295	253	304	342	385	827
Urban Operations: Platoon Kit	U88092	$165,000	97	118	129	139	531

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Field Logistics							
Fuel System Supply Point (FSSP) Type-3 120K	F04898	$200,000	47	47	47	47	44
Advanced Aviation Forward Area Refueling Sys (AAFARS) *	F42611	$321,537	109	109	109	109	128
Forward Area Water Point Supply System (FAW SS) *	F42612	$2,043	246	246	246	246	30
Hydraulic System Test and Repair Unit (MX3)	H05002	$80,000	120	120	120	120	316
Multi-temperature Refrigerate Container System (MTRCS)	M30688	$107,100	239	239	239	239	467
Petroleum Quality Analysis System (PQAS)	P25493	$668,000	1	1	1	1	0
Petroleum Quality Analysis System	P25743	$1,384,000	9	10	12	15	19
Rough Terrain Container Handler: Kalmar RT240 *	R16611	$740,815	93	93	93	93	80
Tool Outfit Hydraulic System: Test and Repair 3/4-ton TM	T30377	$91,947	56	56	56	56	37
LHS-compatible 2K-gal Water Tank-Rack (HIPPO) *	T32629	$131,839	446	528	590	621	1,344
Truck Lift Fork: DED 50K-lb Container Handler RT	T48941	$159,138	5	5	5	5	30
Truck Lift Fork: DED 6000-lb Variable Reach RT Ammo-hdlg	T48944	$72,370	477	477	477	477	172
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	$75,000	329	329	329	329	493
Truck Lift Fork: Variable Reach Rough Terrain *	T73347	$153,000	672	672	672	672	776
Truck Lift Fork Articulated: All Terrain DED 10000-lb Capacity	T73713	$75,000	1	1	1	1	14
Tank Fabric Collapsible: Water 3000-gal	V15018	$1,762	7	7	7	7	203
Tank Unit Liquid Dispensing Trailer Mounting *	V19950	$2,000	426	474	474	474	590
Water Purifier: Lightweight *	W30051	$167,062	207	207	207	207	119
Water Purification: Reverse Osmosis 3K-gph TM *	W47225	$748,000	74	74	74	74	79
Water Storage/Distribution Set: 40K-gpd (Brigade) *	W55968	$121,746	6	6	6	6	36
Trailer Tank Water: 400-gal 1-1/2 ton *	W98825	$16,000	3,113	3,113	3,113	3,113	3,394
Truck Dolly: Steel Gen Utility Type w/Wheels wo/Pad	X43160	$488	134	134	134	134	133
Truck Hand Platform: Wood Nontilt Type	X47818	$928	521	521	521	521	873
Truck Lift Fork: DED 4000-lb Capacity OPT LH	X48863	$30,000	19	19	19	19	0
Truck Lift Fork: DED 6000-lb Capacity 130-in LH	X48876	$29,000	7	7	7	7	0
Truck Lift Fork: DED PT 50000-lb w/Top LF Atch	X48904	$124,797	0	0	0	0	18
Truck Lift Fork: DED 6000-lb Capacity Rough Terrain	X48914	$32,550	33	33	33	33	50
Truck Lift Fork: DED 10000-lb Capacity Rough Terrain	X49051	$52,821	4	4	4	4	10
Truck Lift Fork: Gas 4000-lb	X51585	$26,134	13	13	13	13	648
Truck Lift Fork: DSL/Gas/LPG 6000-lb OPT LH	X51722	$31,545	41	41	41	41	0
Truck Lift Fork: Gas PT 6000-lb	X51791	$12,459	9	9	9	9	102
Truck Lift Wheel: Mechanical Lift 2400-lb	X53298	$593	569	569	569	569	1,484
Test Station Electrical Electronic Equipment Containerized	Z01554	n/d	0	0	0	0	39
Modular Fuel System (MFS): Pump Rack Module (PRM)	Z01595	$100,000	0	0	0	0	2
Force Protection							
Battlefield Anti-intrusion System: AN/PRS-9	B57077	$32,640	3,242	3,242	3,242	3,242	3,680
Chem-Bio Protective Shelter: M8 *	C07506	$622,051	6	6	6	6	194
Joint Chemical Agent Detector *	J00697	$3,600	18,022	18,022	18,022	18,022	18,904
Lighting Kit Motion Detector (LKMD): AN/GAR-2	L02015	$3,500	5,496	5,496	5,496	5,496	7,444
Mask Chem-Bio Joint Service General Purpose: M50	M12986	$261	8,667	8,667	8,667	8,667	259,415
Mask Chem-Bio: Combat Crewman: M51	M13236	$424	306	306	306	306	22,461
Chem-Bio Protective Shelter (CBPS)	Z01533	n/d	0	0	0	0	105

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
General Engineering							
Hydraulic-Electric-Pneumatic-Petroleum Operated Equipment (HEPPOE)	H05004	$175,500	113	137	161	181	252
Maneuver Combat Vehicles							
Anti-Tank Guided Missile Vehicle (ATGM)	A83852	$2,320,389	9	9	9	9	9
Carrier 120mm Mortar: Self-propelled Armored	C10990	$318,308	131	131	131	131	119
Carrier Personnel Full Tracked: Armored (RISE)	C18234	$405,815	908	908	908	908	799
Command Variant Vehicle (CV)	C41314	$2,320,389	27	27	27	27	31
Cavalry Fighting Vehicle: M3	C76335	$1,056,845	1	1	1	1	7
Fighting Vehicle: Full Tracked Infantry High Survivability (IFV)	F40375	$1,311,639	49	49	49	49	32
Fighting Vehicle: Full Tracked Cavalry High Survivability (CFV)	F60530	$1,144,000	24	24	24	24	20
Fighting Vehicle: Full Tracked Infantry (IFV) M2A3	F60564	$4,409,064	159	159	159	159	29
Fire Support Vehicle (FSV)	F86821	$2,200,000	13	13	13	13	13
Fighting Vehicle: Full Tracked Cavalry (CFV) M3A3	F90796	$4,021,449	58	58	58	58	9
Infantry Carrier Vehicle (ICV)	J22626	$2,320,389	146	146	146	146	129
Engineer Squad Vehicle (ESV)	J97621	$2,320,389	12	12	12	12	13
Medical Evacuation Vehicle (MEV) *	M30567	$2,320,389	17	17	17	17	16
M2A2ODS for Engineers	M31793	$1,311,639	0	0	0	0	91
Mortar Carrier Vehicle (MCV)	M53369	$1,826,897	36	36	36	36	36
Mobile Gun System (MGS)	M57720	$2,320,389	9	9	9	9	27
Operation Desert Storm (ODS) Situational Awareness (SA): M2A2	P19727	$2,300,000	460	460	460	460	505
ODS SA: M3A2	P19795	$2,300,000	175	175	175	175	243
Recovery Vehicle Full Tracked: Medium	R50681	$1,210,755	225	225	225	225	236
Recovery Vehicle Full Tracked: Heavy M88A2	R50885	$2,748,846	171	207	212	222	150
Reconnaissance Vehicle (RV)	R62673	$2,320,389	51	51	51	51	51
Tank Combat Full Tracked: 120mm Gun	T13168	$2,393,439	347	347	347	347	538
Tank Combat Full Tracked: 120mm Gun M1A2	T13305	$4,445,399	146	146	146	146	28
Maneuver Systems							
Drivers Enhancers: AN/VAS-5 *	D41659	$35,000	3,286	3,286	3,286	3,286	3,614
Surveillance System: Scout Long Range AN/TAS-8 *	S02976	$400,000	1,068	1,068	1,068	1,068	1,092
Target Acquisition System: TOW Improved ITAS M41	T24690	$1,010,000	669	669	669	669	721
Medical Field Systems							
Medical Equipment Set (MES): Chemical Agent Patient Treatment *	M23673	$19,341	870	886	990	990	912
MES: Sick Call Field	M30156	$36,646	49	49	49	49	0
MES: Combat Medic *	U65480	$3,254	4,931	4,931	4,931	4,931	4,922
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	34	34	34	34	38
Sensor, Infrared	FA550P	$5,000,000	63	63	63	63	0
Image Intensifier, Night Vision	FA5535	$6,013	1	1	1	1	0
Night Vision Sight: AN/PVS-1	FA5575	$12,910	7	7	7	7	0

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Viewer Night Vision	FA5597	$662	16	16	16	16	0
Helmet Unit: Integrated (IHADSS)	H35257	$19,164	758	758	758	758	748
Laser: Target Locator Module	L05003	$42,912	1,032	1,032	1,032	1,032	3,717
Marker: Laser System	M14868	$95,000	34	34	34	34	0
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-6	M74849	$22,015	1,314	1,314	1,314	1,314	3,015
Rope Assembly: Insertion and Extraction System	R22995	$1,264	204	204	204	204	398
Universal Night Sight (UNS): AN/PVS-22	S90501	$8,100	100	100	100	100	0
Target Locator Module	T27471	$19,300	1,068	1,068	1,068	1,068	3,565
Unmanned Ground Vehicle Tracked: XM216	U31832	$187,312	0	0	0	0	1,023
Mounted Water Ration Heater (MWRH)	W52987	$1,408	168	168	168	168	0
Viewer Infrared: AN/PAS-7	Y03104	$16,779	4	4	4	4	0
Laser: Target Locator Module	Z01676	n/d	596	811	1,000	1,244	0
Ground Soldier System	Z074FD	n/d	831	1,734	2,637	3,540	0
Tactical Communications and Protective System (TCAPS)	Z661FD	n/d	1,010	2,020	2,020	2,020	0
Soldier Weapons							
Command Launch Unit: (Javelin) 13305405-119 *	C60750	$126,824	2,561	2,561	2,561	2,561	2,588
Launcher Grenade: M320 *	L03621	$3,413	708	2,364	2,963	2,963	5,959
Launcher Grenade: M320A1 *	L69080	$3,413	12,381	12,381	12,381	12,381	17,691
Machine Gun: Caliber .50 Heavy Fixed Turret Type	L91701	$13,648	1,662	1,662	1,662	1,662	2,058
Machine Gun: Caliber .50 HB Flexible (Ground & Vehicle)	L91975	$12,685	8,487	8,487	8,487	8,487	641
Machine Gun: 7.62mm Fixed	L92352	$5,474	1,046	1,046	1,046	1,046	1,083
Machine Gun: 5.56mm M249	M09009	$3,830	28,105	28,105	28,105	28,105	25,316
Machine Gun: 5.56mm M249 Light	M39263	$2,779	5,275	5,275	5,275	5,275	7,869
Machine Gun: Caliber .50	M39331	$8,493	5,996	5,996	5,996	5,996	14,277
Machine Gun Grenade: 40mm Mk19 Mod III	M92362	$15,320	8,588	8,588	8,588	8,588	9,456
Machine Gun: 7.62mm Fixed RH Feed	M92420	$4,890	1,039	1,039	1,039	1,039	1,010
Machine Gun: 7.62mm M240L	M92454	$12,000	2,697	2,697	2,697	2,697	3,443
Machine Gun: 7.62mm M240H	M92591	$8,593	1,509	1,509	1,509	1,509	1,561
Machine Gun: 7.62mm M240B	M92841	$6,000	13,403	13,403	13,403	13,403	11,620
Rifle Sniper Caliber .50: M107 *	R45351	$7,500	692	692	692	692	754
Rifle Sniper: M110 *	R45601	$8,500	607	607	607	607	602
Rifle 7.62mm	R95114	$2,500	1,732	1,732	1,732	1,732	2,205
Rifle 5.56mm: M4 *	R97234	$1,329	153,292	153,292	153,292	153,292	176,407
Strike							
Aiming Circle	A22496	$3,725	941	941	941	941	1,159
Radar Set: AN/TPQ-37(V)9	A41666	$14,465,400	9	9	9	9	0
Computer System, Digital: AN/GYK-56 (AFATDS)	C05018	$33,596	262	262	262	262	295
Computer Set: AN/GYG-1(V)1	C17936	$32,924	72	72	72	72	639
Computer Set: AN/GYG-1(V)3	C18004	$63,158	43	43	43	43	196
Computer System, Digital: AN/PYG-2(V)1	C40495	$8,114	314	314	314	314	246
Computer System, Digital: AN/PYG-1	C53293	$7,587	528	528	528	528	644
Fire Support Team Vehicle: Bradley (BFIST)	F86571	$903,195	9	9	9	9	0
Howitzer Light Towed: M119	H57505	$1,100,000	294	294	294	294	162

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Howitzer Medium Towed: M777	H57916	$2,000,000	136	136	136	136	247
Knight: Armored	K29708	$1,718,004	180	180	180	180	74
Howitzer, Light Towed, 105mm	K57392	$21,254	47	47	47	47	132
Howitzer Medium Self-propelled: 155mm	K57667	$923,286	1	1	1	1	3
Howitzer, Medium Towed, 155mm M198	K57821	$1,032,337	8	8	8	8	12
Meteorological Measuring Set - Profiler: AN/TMQ-52	M36361	$750,000	16	16	16	16	1
Plotting Board Indirect Fire: Azimuth	P07900	$631	499	499	499	499	0
Protractor Fan Range Deflection: AL 1-50000 meter Range	P81748	$900	20	20	20	20	149
Quadrant Fire Control: Gunners	Q03468	$900	575	575	575	575	582
Range Finder-Target Designator: Laser AN/PED-1	R60282	$300,000	772	772	772	772	995
Computer System, Digital: AN/PYG-1	Z00311	n/d	15	15	15	15	0
Radar System: Counter Fire Target Acquisition Radar	Z00737	$13,100,000	0	0	13	24	75
Lightweight Counter Mortar Radar: AN/TPQ-50	Z00962	n/d	17	17	17	17	0
Support Systems							
Container Handling	C27294	$40,165	451	451	451	451	1,511
Trailers							
Semitrailer Flatbed: Breakbulk/Container 22-1/2-ton *	S70027	$22,000	3,636	3,636	3,636	3,636	3,507
Semitrailer Low-bed: Heavy Equipment Transporter 110-ton	S70032	$103,000	2	2	2	2	70
Semitrailer Flatbed: Breakbulk/Container 34-ton *	S70159	$43,252	3,813	3,813	3,813	3,813	4,358
Semitrailer Low-bed: 15-25 ton 4-wheel	S70380	$27,114	22	22	22	22	151
Semitrailer Low Bed: 25-ton 4-wheel W/E *	S70517	$3,758	203	203	203	203	726
Semitrailer Low-bed: 50-ton 8-wheel	S70759	$24,811	6	6	6	6	115
Semitrailer Stake: 12-ton 2-wheel 26-30 ft Body	S72161	$16,095	1	1	1	1	74
Semitrailer Stake: 20-ton 4-wheel	S72178	$24,035	3	3	3	3	50
Trucks							
Truck Utility TOW/ITAS Carrier w/IAP Armor-ready: M1167 *	T34840	$222,487	416	416	416	416	8
Truck Ambulance: 2-Litter Armored HMMWV	T38707	$25,000	29	29	29	29	2
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	$108,529	1,428	1,428	1,428	1,428	1,760
Truck Cargo: Heavy PLS Transporter 15-16.5 ton w/MHE *	T41067	$288,015	509	509	509	509	232
Truck Cargo: 5-ton wo/Winch *	T41515	$200,000	4,784	4,784	4,784	4,834	7,839
Truck Wrecker: Tactical HEMTT W/W *	T63093	$491,382	672	672	672	672	334
Truck Wrecker: M984A4	T63161	$491,382	362	362	362	362	725
Truck: Palletized Loading System (PLS)	T81874	$360,000	470	510	611	673	1,304
Truck Wrecker *	T94671	$375,000	398	398	398	398	443
Truck Cargo: 8X8 HEMTT w/LHS *	T96496	$321,057	830	830	830	830	260

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 2015.

Nomenclature	Equip No.	Average Age	Remarks
Aircraft			
Aerial Scout Helicopter: OH-58D	A21633	18	
Helicopter Cargo Transport: CH-47D	H30517	3	
Helicopter Light Utility (LUH): UH-72A	H31329	4	
Helicopter Utility: UH-60L	H32361	23	
Helicopter Utility: UH-60M	H32429	8	
Helicopter Attack: AH-64D	H48918	11	
Helicopter Utility: UH-60A	K32293	32	
Airplane Cargo Transport: C-12D	A29812	31	
Battle Command and Control (C2)			
Generator Set: DED Skid-mtd 5kW 60Hz	G11966	11	
Generator Set: DED TM PU-803	G35851	12	
Generator Set: DED 60Hz AC MEP-531A	G36237	13	
Generator Set: DED TM 10kW 60Hz	G42170	11	
Generator Set: DED TM 5kW 60Hz	G42238	10	
Generator Set: DED Trailer-mtd (TM) PU-802	G53778	9	
Generator Set: DED Skid-mtd 10kW 60Hz	G74711	10	
Generator Set: DED TM 60kW 50/60Hz PU805 Chassis	G78306	15	
Generator Set: DED TM 15kW 60Hz	G78374	10	
Power Plant: Electric TM 30kW 50/60Hz AN/MJQ-40	P42126	12	
Power Plant: Diesel TM 10kW 60Hz AN/NJQ-37	P42262	15	
Combat Mobility			
Boat Bridge Erection Inboard Engine: Shallow Draft	B25476	21	
Field Logistics			
Truck Lift Fork: DED 50K lb Cont Hdlr Rough Terrain	T48941	32	
Truck Lift Fork: Variable Reach Rough Terrain	T73347	8	
Water Purification: Reverse Osmosis 3K-gph TM	W47225	20	
Maneuver Combat Vehicles			
Carrier Personnel Full Tracked: Armored (RISE)	C18234	28	
Cavalry Fighting Vehicle: M3	C76335	30	
Fighting Vehicle: Full Track Infantry Hi Survivability (IFV)	F40375	21	
Fighting Vehicle: Full-Track Cavalry Hi Survivability (CFV)	F60530	25	
Fire Support Vehicle (FSV)	F86821	9	
Infantry Carrier Vehicle (ICV)	J22626	8	
Engineer Squad Vehicle (ESV)	J97621	8	
Mortar Carrier Vehicle (MCV)	M53369	11	
Mobile Gun System (MGS)	M57720	30	
Recovery Vehicle Full Tracked: Medium	R50681	37	

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Table 2

Average Age of Equipment

Nomenclature	Equip No.	Average Age	Remarks
Tank Combat Full Tracked: 120mm Gun	T13168	22	
Strike			
Howitzer Light Towed: M119	H57505	7	
Howitzer Medium Self Propelled 155mm	K57667	44	
Trailers			
Semitrailer Flatbed: Breakbulk/Cont Transporter 22-1/2-ton	S70027	20	
Semitrailer Flatbed: Breakbulk/Container Transporter 34-ton	S70159	25	
Trucks			
Truck Ambulance: 2 Litter Armored HMMWV	T38707	26	
Truck Ambulance: 4 Litter Armored HMMWV	T38844	25	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton w/MHE	T41067	19	
Truck Wrecker: Tactical HEMTT with/Winch	T63093	16	
Truck Cargo: Tactical 8X8 HEMTT w/LHS	T96496	9	

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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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Aircraft			
UH-60 Blackhawk M Model (MYP)	$259,450,000	$292,123,000	$433,814,000
UH-60 Blackhawk A and L Models	46,641,000	46,588,000	75,714,000
Modification of Aircraft			
Utility/Cargo Airplane Modifications	7,357,000	4,168,000	2,240,000
Network and Mission Plan	42,867,000	38,904,000	52,286,000
Communications, Navigation, and Surveillance	33,162,000	40,255,000	44,049,000
Global Air Traffic Management (GATM) Rollup	13,556,000	22,600,000	24,466,000
Support Equipment and Facilities			
Common Ground Equipment	30,331,000	30,222,000	33,301,000
Air Traffic Control	22,268,000		
Other Missiles			
Multiple Launch Rocket System (MLRS) Reduced Range Practice Rockets (RRPR)	8,343,000	8,101,000	8,475,000
Modification of Missiles			
Avenger Modifications	2,701,000	3,233,000	42,633,000
Improved Target Acquisition System (ITAS) / TOW Modifications	13,160,000		
High Mobility Artillery Rocket System (HIMARS) Modifications	2,140,000	1,796,000	6,710,000
Spares and Repair Parts (Missiles)	226,000	226,000	226,000
Weapons and Tracked Combat Vehicles (WTCV)			
Howitzer, Medium Self-propelled Full-tracked 155mm M109A6 (Modifications)	24,032,000	26,971,000	26,770,000
Paladin Integrated Management (PIM)		189,243,000	267,010,000
Improved Recovery Vehicle (M88A2 Hercules)	16,097,000	60,253,000	
Joint Assault Bridge			37,267,000
Integrated Air Burst Weapon System Family			7,034,000
Mortar Systems	1,500,000		
XM320 Grenade Launcher Module (GLM)	5,472,000		
Precision Sniper Rifle			990,000
Carbine	11,665,000	4,292,000	3,293,000
Handgun	2,167,000	5,108,000	5,345,000
M777 Howitzer Modifications	4,028,000	4,804,000	
M4 Carbine Modifications	2,417,000	2,485,000	2,518,000
M2 .50 cal Machine Gun Modifications	17,302,000	21,231,000	12,000,000
M119 Howitzer Modifications	8,240,000	1,558,000	1,570,000
Tactical and Support Vehicles			
Tactical Trailers/Dolly Sets	2,751,000	3,897,000	3,980,000
Joint Light Tactical Vehicle (JLTV)		176,200,000	
Truck, Dump, 20-ton (CCE)		14,171,000	20,207,000

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Table 3

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2016	FY 2017	FY 2018
Family of Medium Tactical Vehicles (FMTV)	9,000,000	40,490,000	23,202,000
Firetrucks & Associated Firefighting Equipment	415,000	416,000	418,000
Family of Heavy Tactical Vehicles (FHTV)	20,386,000	35,117,000	740,000
Palletized Load System (PLS) Extended Service Program (ESP)	53,412,000	3,672,000	
Modification of In-service Equipment	19,789,000	529,000	17,718,000
Communications and Electronics Equipment			
Warfighter Information Network-Tactical (WIN-T) - Ground Forces Tactical Network	405,333,000	396,439,000	502,628,000
Signal Modernization Program		19,099,000	
Joint Incident Site Communications Capability	3,643,000	5,367,000	5,621,000
Transportable Tactical Command Communications		4,720,000	5,900,000
SMART-T (Space)	2,000,000	2,000,000	
Global Broadcast Service (GBS)	1,000,000		
Mid-tier Networking Vehicular Radio (MNVR)	6,905,000	6,910,000	12,062,000
Army Materiel Command (AMC) Critical Items - OPA-2	13,867,000	16,125,000	2,200,000
Unified Command Suite	20,274,000	12,814,000	13,503,000
Family of Medical Communications for Combat Casualty Care	11,519,000	10,433,000	5,275,000
Communications Security (COMSEC)	1,178,000	4,061,000	2,736,000
Distributed Common Ground System - Army (DCGS-A) (MIP)	49,990,000	49,711,000	50,520,000
Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) (MIP)	249,000	707,000	669,000
Lightweight Counter Mortar Radar	28,212,000	16,239,000	5,700,000
Sentinel Modifications	13,468,000	6,393,000	31,941,000
Night Vision Devices	70,057,000	63,743,000	52,691,000
Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Range Finder (MLRF)	7,220,000	5,879,000	
Indirect Fire Protection Family of Systems	25,836,000	15,626,000	2,925,000
Family of Weapon Sights (FWS)	11,044,000	14,194,000	24,249,000
Artillery Accuracy Equipment	1,669,000	2,761,000	1,064,000
Joint Battle Command - Platform (JBC-P)	23,960,000	24,380,000	23,240,000
Joint Effects Targeting System (JETS)			22,841,000
Modification of In-service Equipment (Lightweight Laser Designator/Rangefinder [LLDR])	9,081,000	9,306,000	11,552,000
Counterfire Radars	143,884,000	124,707,000	132,326,000
Air & Missile Defense Planning and Control System (AMDPCS)	13,110,000	27,463,000	25,896,000
Network Management Initialization and Service	2,472,000	2,435,000	2,163,000
Maneuver Control System (MCS)	61,985,000	37,803,000	25,292,000
Global Combat Support System - Army (GCSS-A)	33,201,000	31,695,000	6,016,000
Reconnaissance and Surveying Instrument Set	7,562,000	102,000	778,000
Reserve Component Automation System (RCAS)	5,965,000	8,596,000	8,762,000
Tactical Digital Media			800,000
Items Less Than $5M (Surveying Equipment)	1,128,000	784,000	1,000,000
Other Support Equipment			
Protective Systems		844,000	784,000

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Table 3

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2016	FY 2017	FY 2018
Family of Non-Lethal Equipment (FNLE)			3,328,000
CBRN Defense		350,000	324,000
Tactical Bridge - Float Ribbon		21,061,000	26,911,000
Ground Standoff Minefield Detection System (GSTAMIDS)		3,047,000	13,449,000
Husky Mounted Detection System (HMDS)	3,391,000	6,405,000	17,558,000
Robotic Combat Support System (RCSS)		5,583,000	
Robotics and Applique Systems			2,974,000
Explosive Ordnance Disposal (EOD) Equipment	4,724,000	7,685,000	7,248,000
Remote Demolition Systems	3,102,000		
Items Less Than $5M (Countermine Equipment)	1,800,000	1,150,000	1,935,000
Family of Boats and Motors	3,873,000	957,000	1,428,000
Heaters and Environmental Control Units (ECUs)	6,546,000	9,523,000	4,102,000
Field Feeding Equipment	3,157,000	4,500,000	4,017,000
Cargo Aerial Delivery & Personnel Parachute System	264,000	264,000	264,000
Family of Engineer Combat and Construction Sets	14,647,000	13,012,000	13,395,000
Quality Surveillance Equipment	1,353,000	2,713,000	4,194,000
Distribution Systems, Petroleum & Water	17,250,000	12,333,000	11,288,000
Combat Support Medical	22,098,000	12,218,000	12,688,000
Mobile Maintenance Equipment Systems	12,018,000	11,498,000	11,163,000
Items Less Than $5M (Maintenance Equipment)	1,328,000	1,328,000	1,328,000
Grader, Road Motorized, Heavy, 6x4, (CCE)	1,063,000	1,770,000	
Scrapers, Earthmoving	14,051,000	12,697,000	25,012,000
All Terrain Cranes	8,652,000	3,680,000	3,800,000
Enhanced Rapid Airfield Construction Capability (ERACC)	1,255,000		
Construction Equipment ESP	9,702,000	14,168,000	14,047,000
Items Less Than $5M (Construction Equipment)	1,729,000	4,032,000	4,424,000
Generators and Associated Equipment	57,034,000	36,714,000	35,364,000
Family of Forklifts	4,818,000	1,198,000	
Training Devices, Nonsystem	28,085,000	27,866,000	6,986,000
Close Combat Tactical Trainer	5,100,000	2,080,000	2,384,000
Aviation Combined Arms Tactical Trainer	9,171,000	8,650,000	8,498,000
Gaming Technology in Support of Army Training	3,264,000	6,230,000	5,204,000
Calibration Sets Equipment	1,902,000	2,804,000	2,683,000
Integrated Family of Test Equipment (IFTE)	17,173,000	10,605,000	9,130,000
Test Equipment Modernization (TEMOD)	4,665,000	6,802,000	7,117,000
Modification of In-service Equipment (OPA-3)	963,000	958,000	2,878,000
Total	**$1,920,865,000**	**$2,253,870,000**	**$2,400,231,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment			
Aviation			
B-Kit Upgrade Forward-looking Infrared Radar (FLIR) (UH-60)	$13,740,000		
A-Kit Upgrade Forward-looking Infrared Radar (FLIR) (UH-60)	4,500,000		
A-Kit Internal Auxiliary Fuel Tank System (UH-60)	2,000,000		
Civilian Communication Package A-Kit	4,950,000		
Engine Inlet Barrier Filter (UH-72A)	1,171,500		
Blade Folding System	661,304		
Domestic Operations			
Chemical-Biological Protective System M8E1	43,293,840		
Dismounted Communication Strike Kit (Small)	19,477,168		
Decontamination Trailer Mobile Mass C-130 Deployable (HRF/CERFP)	3,847,964		
ALS Computer Subsystem Modernization	1,702,560		
Engineering			
Hydraulic Excavator (HYEX)	5,183,603		
Intelligence			
Sensitive Compartmented Information Facility (SCIF) Systems	9,000,000		
Logistics			
Multi-Temperature Refrigerated Container System (MTRCS)	7,000,000		
Assault Kitchens	2,575,000		
Maintenance			
Maintenance Support Device	4,719,786		
Hydraulic System Test and Repair Unit (HSTRU)	4,025,000		
Training			
Virtual Convoy Operations Trainer (VCOT) C4	57,946,770		
Individual Gunnery Trainer Brigade Combat Team Weapons Package Upgrade Sets	40,682,174		
Deployable Force-on-force Instrumented Range System (DFIRST 3.0) FLEXTRAIN System	24,379,098		
Close Combat Tactical Trainer - Dismounted Soldier System	14,500,000		
Mission Command System	5,088,572		
Tabletop Trainer (RWS-TT) (Stryker Remote Weapon System [RWS])	1,305,337		
Training/Aviation			
Aviation Combined Arms Tactical Trainer (AVCATT) Module (Light Utility Helicopter [LUH])	34,000,000		
Synthetic Flight Simulator (UH-72A)	18,000,000		
Universal Mission Simulator (Shadow Crew Trainer)	8,597,000		
Maintenance Trainer (LUH) (Non-Virtual)	4,730,346		

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
Maintenance Trainer (LUH) Virtual	3,200,000		
Transportation			
5-ton Wrecker (M1089A1P2)	52,463,322		
HMMWV Ambulance Integration Efforts	45,000,000		
Truck Tractor (M1088A1P2)	22,259,657		
FY 2014 NGREA Equipment			
Aviation			
Forward-looking Infrared Radar (FLIR) Upgrade (A-Kit and B-Kit) (UH-60)		$42,560,000	
Internal Auxiliary Fuel Tank System (A-Kit and B-Kit) (UH-60)		7,400,000	
Hydraulic Rescue Hoist Guard Support Equipment with Magnetic Inspection System (UH-60)		1,818,420	
Civilian Communication Package A-Kit and B-Kit		12,054,000	
Display Unit Upgrade (Day Heads-Up Display)		5,170,000	
Rescue Hoist: Mission Equipment Package (UH-72A)		1,280,004	
Settling Protectors (UH-72A)		701,400	
Blade Folding System (UH-72A)		254,350	
Training Enhancement Seats (UH-72A)		164,500	
Aviation Ground Power Unit 2860-A (UH-72A)		96,624	
Water Purification Kit (UH-72A)		79,540	
Communications			
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	
Cyber Training Range Configuration		514,000	
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			
Engineer Equipment Set: Urban Operations Squad Kit		23,048,000	
Engineer Equipment Set: Urban Operations Platoon Kit		18,400,000	
Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE)		20,125,000	
Heavy Crane, Type II		11,000,000	
7-Man Combat Raiding Craft with 1 motor each		8,918,000	
15-man Combat Assault Craft with 2 motors each		2,975,000	
Instrument Set, Reconnaissance & Surveying (ENFIRE AN/TKQ-5)		8,452,500	
Special Operations Forces Demolition Kit, M303		2,703,200	
Portable Concrete Mixer		1,759,500	
Intelligence			
Sensitive Compartmented Information Facility (SCIF) Equipment Set		9,000,000	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
Logistics			
Assault Kitchen		4,200,000	
Multi-Temperature Refrigerated Container System (MTRCS)		2,520,000	
Maintenance			
Maintenance Support Device		2,212,000	
Surveillance			
Lightweight Counter Mortar Radar (LCMR), AN/TPQ-50		7,200,000	
Training			
Call For Fire Trainer (CFFT)		12,369,000	
Deployable Force-on-Force Instrumented Range System (FLEXTRAIN)		12,189,549	
Mobile Distributed Learning Classroom		5,709,000	
Fixed and Mobile Distributed Learning Classroom Computers		3,240,000	
Common Driver Trainer (CDT) System and Upgrades		5,301,000	
Engagement Skills Trainer Technology Refresh		5,070,000	
Modular Small Arms Training System (8-Lane)		3,514,177	
Training/Aviation			
Synthetic Flight Simulator (UH-72A)		14,000,000	
Transportable Blackhawk Operations Simulator (TBOS) (UH-60M)		10,000,000	
Non-rated Crew Member Manned Module (NCM3)		3,500,000	
Universal Mission Simulator		3,463,248	
Shadow Crew Trainer Upgrade		2,199,988	
Transportation			
Engineering Change Proposal (ECP) Freight/Tarps and Bows (FMTV)		1,000,000	
Total	**$460,000,000**	**$315,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 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 2016 Qty	FY 2017 Qty	FY 2018 [1] Qty	Remarks
Air Defense					
Computer: Tactical AN/GYQ-88	C77755	+43			
Radar Set: Sentinel AN/MPQ-64A1	G92997	+5			
Aviation					
Tester: Pitot and Static Systems TS-4463/P	T03597	+32			
Battle Command (Command & Control)					
Computer Set: Digital AN/GYK-62	C13866	+37	+19		
Computer Set: Digital AN/UYK-128	C18378	+4,140			
Computer System: Digital AN/PYQ-13 (GCCS-A)	C27588	+16			
Computer System: Digital	C27963	+8			
Generator Set: DED 60kW 50/60Hz Skid-mtd	G63256	+68			
Generator Set: DED TM 5kW 60Hz mtd on M116A2 PU-797	G42238	+10			
Generator Set: DID 5kW 50/60Hz Skid-mtd	G42488		+50		
Generator Set: DED Skid-mtd 5kW 60Hz	G11966	+7			
Generator Set: DED 60Hz AC MEP-531A	G36237	+57	+21		
Generator Set: 10kW 50/60Hz Skid-mtd	G07461	+24	+10		
LTT Trailer-mtd: PU-2001 5kW 50/60Hz	L26934	+32			
LTT Trailer-mtd: PU-2003 15kW 50/60Hz	L84690	+4			
Power Supply: PP-6224/U	P40750	+280			
Trailer-mtd: PP-3106 60kW 50/60Hz 2M200A1	T93232	+4	+1		
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	+22	+7		
Battlespace Awareness					
Data Analysis Central: AN/MSW-24	D77801	+7	+3		
Detecting System Countermeasures: AN/MLQ-40(V)4	D04182	+20			
Battle Command Transport Networks					
Battalion Command Post Switching Group: OM-XXX	B67234	+38	+18		
Frequency Hopipng Multiplexer: TD-1456VRC	F99520	+135	+32		
Joint Node Network (JNN) Central Office Telephone Auto: AN/TTC	J05001	+9	+4		
Net Control Station: AN/TSQ-158	N04580	+6	+10		
Radio Set	R55336	+10			
Radio Set, Grid Reference: AN/GRC-229D	R91580		+5		
Radio Set: AN/PRC-119F(C)	R83141	+377	+27		
Radio Set: AN/VRC-87F(C)	R67296	+10			
Radio Set: AN/VRC-88F(C)	R67330	+18			
Radio Set: AN/VRC-89F(C)	R44999	+569	+22		

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Projected Equipment Transfer/Withdrawal Quantities

Nomenclature	Equip No.	FY 2016 Qty	FY 2017 Qty	FY 2018 [1] Qty	Remarks
Radio Set: AN/VRC-90F(C)	R68044	+177			
Radio Set: AN/VRC-91F(C)	R68146	+17			
Radio Set: AN/VRC-92F(C)	R45543		+246		
Radio Set: AN/VSQ-2D(V)2	P99724	+89			
Teleconference System: AN/TYQ-122	T43146	+66			
Combat Mobility					
Assault Breacher Vehicle (ABV)	A05001	+6			
Boat Bridge Erection Inboard Engine: Shallow Draft	B25476	+9			
Field Logistics					
Advanced Aviation Forward Area Refueling System (AAFARS)	F42611	+6			
Hydraulic System Test and Repair Unit (MX3)	H05002	+16	+3		
Load Handling System (LHS) Compatible, 2000-gal Water Tank Rack (HIPPO)	T32629	+170			
Truck Hand Platform: Wood Nontilt Type	X47818	+111	+3		
Truck Lift Fork: DED 6000-lb Cap Rough Terrain	X48914	+6			
Truck Lift Fork: Gas 4000-lb	X51585	+3	+10		
Truck Lift Wheel: Mechanical Lift 2400-lb	X53298	+143			
Truck Lift Fork Variable Reach Rough Terrain	T73347	+64			
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd	W47225	+10			
Force Protection					
Chemical-Biological Protective Shelter (CBPS): M8	C07506	+49			
Joint Chemical Agent: Detector	J00697	+558	+127		
Chemical-Biological Joint Service General Purpose Mask (JSGPM): Field M50	M12986	+948	+59		
Chemical-Biological JCGPM: Combat Vehicle Crewman M51	M13236	+112			
Medical Field Systems					
Medical Equipment Set (MES) Combat Medic	U65480	+25	+6		
Soldier Systems					
Basic Sight Assembly: Support Equipment (TOW 2)	B39044	+4	+1		
IHADSS Integrated Helmet Unit	H35257	+64			
Laser: Target Locator Module	L05003	+454			
Target Locator Module	T27471	+186	+10		
Unmanned Ground Vehicle Tracked: XM216	U31832		+3		
Strike					
Computer Set: AN/GYG-1(V)1	C17936	+23			
Computer System: Digital AN/PYG-1	C53293	+62	+24		
Quadrant Fire Control: Gunners	Q03468	+11			
Lightweight Laser Designator Rangefinder (LLDR): AN/PED-1	R60282	+194			
Trailers					
Semitrailer Flatbed: Breakbulk/Container Transporter Commercial 34-ton	S70159	+101			
Semitrailer Low-bed: 15 to 25 ton 4-wheel	S70380	+5			

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Projected Equipment Transfer/Withdrawal Quantities

Nomenclature	Equip No.	FY 2016 Qty	FY 2017 Qty	FY 2018 [1] Qty	Remarks
Semitrailer Low-bed: 25-ton 4-wheel W/E	S70517	+9	+5		
Trucks					
Truck Cargo: Tactical 8X8 Heavy Expanded Mobility w/LHS	T96496	+22	+1		
Truck Utility ECV TOW/ITAS Carrier with IAP Armor-ready: M1167	T34840	+36			
Truck Wrecker: M984A4	T63161	+12	+13		

1. The Army continues to analyze the effects of end strength reductions and restructuring associated with sequestration. Therefore Table 5 data for the projected equipment transfer and withdrawal estimates associated with FY 2018 are pending senior Army leader decisions.

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
Aircraft							
Helicopter, Cargo CH-47F	C15172	+3	+12				
Battle Command and Control							
Computer System, AN/TYQ-109(V)1	C27707	+2	-154				
Computer Set, AN/UYK-128	C18378	+90	+2,002				
Computer System, AN/UYQ-90(V)2	C18278	+1	+236				
Interface Unit Comm Equipment, OL-713(V)1 / TYQ CSS VSAT	Z00560	+69	0				
Computer Set, OL-582/TYQ	C18446	+6	-8				
Computer Set, OL-603/TYQ	C78827	+1	-14				
Interrogator Set, AN/TYX-1	J99233	+1	+5				
Computer System, AN/TYQ-105(V)1	C27503	+2	+696				
Battle Command Transport Networks							
Radio Set, SINCGARS AN/VRC 91F(C)	R68146	+35	+248				
Radio Set, SINCGARS AN/VRC-89F(C)	R44999	+3	+42				
Radio Set, SINCGARS AN/VRC-90F(C)	R68044	+10	+3,691				
Radio System, EPLRS	P49587	+1	+19				
Radio Set, AN/PSC-5	R57606	+1	+40				
Satellite Comm Terminal, AN/TSC-154	T81733	+1	+3				
Computer System, AN/PYQ-10(C)	Z00384	+853	+1,137				
BN Cmd Post (Switching Group), OM XXX	Z00564	+1	+22				
Field Logistics							
Test Set, Elect Sys AN/PSM-95	T92889	+31	+141				
Kitchen, Containerized, CK	C27633	+1	+90				
Food Sanitation Center	S33399	+1	+6				
Forward Area Water Point Supply System	F42612	+2	+26				
Tank, Liquid Storage	T32629	+9	+59				
Electronic Shop Avionics, AN/ASM-146	H01907	+7	+2				
Force Protection							
Chemical Agent Alarm, M22	A33020	+1	-1,637				

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Mask, Protective, Combat Vehicle, M42	M18526	+6	+281				
Radiac Set, AN/VDR-2	R20684	+11	+109				
Mask, Chemical Biological, M40	M12418	+44	-1,444				
Radiac Set, AN/UDR-13	R31061	+8	-1				
Simplified Collective Protection Equipment, M20	C79000	+6	+63				
Soldier Systems							
Thermal Weapon Sight, AN/PAS-13B(V)1	S60356	+4	+3,961				
Thermal Weapon Sight, AN/PAS-13	S90535	+4	+3,512				
Thermal Weapon Sight, AN/PAS-13A	S90603	+340	+3,344				
Monocular Night-vision Device, AN/PVS-14	M79678	+2	+10,133				
Night-vision Goggles, AN/PVS-7B	N05482	+461	-1,011				
Laser IR Observation Set (MELIOS), AN/PVS-6	M74849	+15	-30				
Telescope, Straight, M145	T60185	+265	-655				
Reflex Sight, Collimator, M68	S60288	+9	-2,348				
Machine Gun Tripod Mount, 7.62mm, M122	M75714	+13	+1,932				
Soldier Weapons							
Machine Gun, 5.56mm, M249, Light	M39263	+4	+25				
Command Launch Unit, Javelin	C60750	+8	+125				
Machine Gun, 7.62mm, M240B	M92841	+343	+990				
Machine Gun, Grenade, 40mm, MK19 MOD III	M92362	+1	+34				
Machine Gun, 5.56mm, M249	M09009	+40	-37				
Machine Gun, Cal .50, M2	L91975	+16	-76				
Pistol, 9mm Automatic, M9	P98152	+5	-1,120				
Strike							
Fire Support Vehicle, Knight, M707	S50205	+4	-14				
Laser Designator Rangefinder, AN/PED-1	R60282	+23	+148				
Trailers							
Trailer, Cargo, 3/4-ton, High Mobility, M1101	T95992	+8	+199				
Trailer, Cargo, 5/4-ton, High Mobility, M1102	T95924	+25	+178				
Semitrailer, 34-ton Flatbed, M872	S70159	+69	+74				
Trailer, Cargo, 2.5-ton LMTV, M1082	T96564	+2	+415				
Trailer, Tank Water, 400 gal, M1112	W98825	+2	-19				

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Trucks							
LMTV 2.5-ton Cargo Truck, M1078	T60081	+45	+128				
FY 2012 P-1R Equipment							
Aircraft							
Helicopter, Light Utility (LUH)				$214,945,000	$250,400,000		
UH-60 Blackhawk (MYP)				174,801,000	237,700,000		
CH-47 Helicopter				540,000,000	540,000,000		
Utility Helicopter Modifications				60,294,000	53,200,000		
Global Air Traffic Management (GATM) Rollup				4,327,000	0		
Other Missiles							
Multiple Launch Rocket System (MLRS) Reduced Range Practice Rockets (RRPR)				7,958,000	6,800,000		
High Mobility Artillery Rocket System (HIMARS)				17,172,000	17,200,000		
HIMARS Modifications				5,620,000	0		
Spares and Repair Parts				544,000	3,400,000		
Tracked Combat Vehicles							
Stryker Vehicle				213,421,000	109,200,000		
Fire Support Team (FIST) Vehicle (Modifications)				12,348,000	9,800,000		
Bradley Program (Modifications)				208,715,000	203,600,000		
Armored Breacher Vehicle (Modifications)				31,541,000	31,500,000		
M88 Family of Vehicles (FOV) (Modifications)				10,000,000	10,000,000		
Weapons and Other Combat Vehicles							
Integrated Air Burst Weapon System Family				4,014,000	0		
Machine Gun, .50 cal M2 Roll				20,390,000	4,700,000		
Machine Gun, Lightweight .50 cal				7,486,000	0		
Mortar Systems				4,790,000	3,600,000		
XM320 Grenade Launcher Module (GLM)				3,980,000	4,000,000		
M4 Carbine				719,000	0		
Shotgun, Modular Accessory System (MASS)				2,296,000	2,296,000		
Howitzer Lightweight 155mm (Towed)				5,361,000	5,400,000		
Howitzer, M119 (Modifications)				13,946,000	18,600,000		
Tactical Vehicles							
Family of Medium Tactical Vehicles (FMTV)				386,813,000	383,300,000		
Family of Heavy Tactical Vehicles (FHTV)				203,754,000	176,300,000		
Palletized Load System (PLS) Extended Service Program (ESP)				184,163,000	184,200,000		
Heavy Expanded Mobile Tactical Truck (HEMTT) ESP				38,737,000	38,600,000		
Communications and Electronics Equipment							
Warfighter Information Network - Tactical (WIN-T) - Ground Forces Tactical Network				6,128,000	16,200,000		
Defense Enterprise Wideband SATCOM Systems				900,000	0		
NAVSTAR Global Positioning System (Space)				3,000,000	0		
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) (Space)				20,035,000	9,700,000		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Global Broadcast Service (GBS)				13,053,000	0		
Mod of In-Service Equipment (Tactical Satellite)				14,154,000	12,400,000		
Army Global Command & Control System (AGCCS)				2,672,000	2,672,000		
Spider Anti-personnel Landmine Alternative (APLA) Remote Control Unit				11,788,000	11,800,000		
Gunshot Detection System (GDS)				1,372,000	4,040,000		
Medical Communications for Combat Casualty Care (MC4)				9,413,000	9,300,000		
Telecommunications Security (TSEC) - Army Key Management System (AKMS)				2,892,000	0		
Distributed Common Ground System - Army (DCGS-A)				29,828,000	19,800,000		
Lightweight Counter Mortar Radar				38,655,000	49,500,000		
Sentinel Modifications				13,570,000	19,300,000		
Night Vision Devices				29,133,000	32,100,000		
Long Range Advanced Scout Surveillance System				62,015,000	62,000,000		
Night Vision, Thermal Weapon Sight				57,623,000	54,400,000		
Small Tactical Optical Rifle Mounted Micro-Laser Range Finder (MLRF)				2,981,000	2,983,000		
Green Laser Interdiction System				7,951,000	8,000,000		
Profiler				1,170,000	1,170,000		
Mod of In-Service Equipment (Firefinder Radars)				2,991,000	3,005,000		
Lightweight Laser Designator/Rangefinder (LLDR)				37,552,000	44,200,000		
Mortar Fire Control System				13,573,000	9,600,000		
Counterfire Radars				110,517,000	110,500,000		
Fire Support Command and Control (C2) Family				21,640,000	21,600,000		
Battle Command Sustainment Support System (BCS3)				7,600,000	5,700,000		
Forward Area Air Defense Command and Control (FAAD) Command and Control (C2)				2,500,000	2,500,000		
Air & Missile Defense Planning & Control System (AMD PCS)				46,788,000	40,900,000		
Knight Family				39,512,000	6,000,000		
Maneuver Control System (MCS)				35,453,000	38,500,000		
Single Army Logistics Enterprise (SALE)				64,092,000	35,900,000		
Reconnaissance and Surveying Instrument Set				8,182,000	8,200,000		
Combat Service Support (CSS) Communications				16,624,000	0		
Items Less Than $5M (Surveying Equipment)				3,803,000	0		
Other Support Equipment							
Protective Systems				0	4,015,000		
Family of Non-Lethal Equipment (FNLE)				22,226,000	2,200,000		
Base Defense Systems (BDS)				14,006,000	14,000,000		
Tactical Bridging				33,695,000	14,200,000		
Tactical Bridge, Float-ribbon				19,710,000	0		
Handheld Standoff Minefield Detection System (HSTAMIDS)				10,358,000	10,400,000		
Explosive Ordnance Disposal (EOD) Equipment				14,800,000	14,800,000		
Heaters and Environmental Control Units (ECUs)				2,250,000	200,000		
Field Feeding Equipment				8,964,000	10,800,000		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Cargo Aerial Delivery & Personnel Parachute System				4,029,000	11,600,000		
Items Less Than $5M (Engineer Support)				4,606,000	4,606,000		
Distribution Systems, Petroleum & Water				22,448,000	22,400,000		
Combat Support Medical				5,158,000	5,200,000		
Mobile Maintenance Equipment Systems				23,803,000	23,800,000		
Scrapers, Earthmoving				10,653,000	10,700,000		
Mission Modules - Engineering				28,733,000	35,400,000		
Tractor, Full Tracked				21,074,000	23,200,000		
High Mobility Engineer Excavator (HMEE) Family of Systems (FOS)				381,000	9,500,000		
Items Less Than $5M (Construction Equipment)				1,231,000	6,622,000		
Generators and Associated Equipment				32,747,000	30,100,000		
Family of Forklifts				1,884,000	2,000,000		
All Terrain Lifting Army System				13,279,000	13,400,000		
Calibration Sets Equipment				3,724,000	5,080,000		
Integrated Family of Test Equipment (IFTE)				16,978,000	11,300,000		
Test Equipment Modernization (TEMOD)				9,024,000	6,500,000		
Modification of In-Service Equipment (OPA-3)				4,525,000	0		
FY 2012 NGREA Equipment [1]							
Training Systems (Simulators, Training Systems)						$123,364,467	$104,944,704
Engineer (General Engineering Equipment)						56,342,645	55,911,311
Domestic Operations (Chemical/Radiation Detection, Decontamination Systems)						45,887,941	67,728,651
Aviation (Support Equipment, Imaging Systems, Unmanned Aerial Systems, Fuel Tanks, Light Utility Helicopters)						37,357,827	40,531,384
Medical (Field Medical, Medical Equipment Sets)						36,980,154	31,181,872
Logistics (Field Feeding, Field Services, Liquid Logistics, Test and Measurement Support Devices)						25,066,300	19,968,411
Total				**$3,447,581,000**	**$3,227,789,000**	**$324,999,333**	**$320,266,333**

1. A decrement of $4,733,000 was applied to ARNG FY 2012 NGREA due to FY 2013 sequestration reduction allocation.

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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 2016 Qty	Deployable?	
					Yes	No
Aviation						
Helicopter Observation: OH-58C	H31110	Helicopter Observation: OH-58A	K31042	9	X	
Helicopter Utility: UH-60L *	H32361	Helicopter Utility: UH-60A *	K32293	213	X	
Battle Command & Control						
Generator Set: DED 60kW 50/60Hz Skid-mtd *	G12034	Generator Set: DED 60kW 60Hz 3PH AC 120/208 240/416 50Hz Tac Util	J38301	1	X	
Generator Set: DED 3kW 60Hz Skid-mtd *	G18358	Generator Set: DED 5kW 60Hz Skid-mtd *	G11966	144	X	
		Generator Set: DED 60Hz AC MEP-531A *	G36237	169	X	
		Generator Set: DED TM 5kW 60Hz *	G42238	50	X	
Generator Set: DED TM PU-803 *	G35851	Generator Set: DED TM 30kW 60Hz mtd on M-200A1 PU-406	J36383	11	X	
Generator Set: DED TM 10kW 60Hz *	G42170	Generator Set: DED TM 10kW 60Hz mtd on M116 PU-753/M	G40744	20	X	
Generator Set: DED TM 5kW 60Hz *	G42238	Generator Set: DED TM 5kW 60Hz mtd on M116 PU-751/M	G37273	10	X	
Generator Set: DED TM PU-802 *	G53778	Generator Set: DED TM 15kW 60Hz mtd on M-200A1 PU-405	J35492	37	X	
		Generator Set: DED TM 30kW 60Hz mtd on M-200A1 PU-406	J36383	14	X	
Generator Set: DED 10kW 60Hz Skid-mtd *	G74711	Generator Set: DED 10kW 60Hz 1-3PH AC 120/208 120/240V TAC UTIL	J35825	23	X	
Generator Set: DED TM 60kW 50/60Hz PU-805 Chassis *	G78306	Generator Set: DED TM 60kW 60Hz mtd on M-200A1 PU-650	J35629	1	X	
Power Supply: PP-6224/U *	P40750	Power Supply: PP-2953/U	P38588	559	X	
Battlespace Awareness						
Radio Set: AN/VRC-89F(C) *	R44999	Radio Set: AN/VRC-91F(C)	R68146	42	X	
Radio Set: AN/VRC-92F(C) *	R45543	Radio Set: AN/VRC-92A	R45407	1,155	X	
		Radio Set: AN/VRC-92D	R45475	897	X	
Radio Set: AN/VRC-87F(C) *	R67296	Radio Set: AN/VRC-87C	R00845	12	X	
		Radio Set: AN/VRC-87A	R67160	58	X	
		Radio Set: AN/VRC-87D	R67228	16	X	
Radio Set: AN/VRC-88F(C) *	R67330	Radio Set: AN/VRC-88A	R67194	485	X	
		Radio Set: AN/VRC-88D	R67262	117	X	
Radio Set: AN/VRC-90F(C) *	R68044	Radio Set: AN/VRC-90A	R67908	10,435	X	
		Radio Set: AN/VRC-90D	R67976	4,919	X	
Radio Set: AN/VRC-91F(C) *	R68146	Radio Set: AN/VRC-91A	R68010	2,899	X	
		Radio Set: AN/VRC-91D	R68078	1,045	X	
Radio Set: AN/PRC-119F(C) *	R83141	Radio Set: AN/VRC-88F(C) *	R67330	24	X	
		Radio Set: AN/PRC-119A	R83005	974	X	
		Radio Set: AN/PRC-119D	R83073	351	X	
Field Logistics						
Forward Area Water Point Supply System (FAW SS) *	F42612	LHS-compatible 2K-gal Water Tank-Rack (HIPPO) *	T32629	11	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 2016 Qty	Deployable?	
					Yes	No
LHS-compatible 2K-gal Water Tank-Rack (HIPPO) *	T32629	Forward Area Water Point Supply System (FAW SS) *	F42612	26	X	
Truck Lift Fork: DED 6000-lb Variable Reach RT Ammo-hdlg	T48944	Truck Lift Fork: Variable Reach Rough Terrain *	T73347	8	X	
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	Truck Lift Fork: DED 6000-lb Variable Reach RT Ammo-hdlg	T48944	61	X	
		Truck Lift Fork: DED 10000-lb Capability Rough Terrain	T49119	7	X	
		Truck Lift Fork: DED 6000-lb Capacity Rough Terrain	X48914	1	X	
Force Protection						
Mask Chemical-Biological Joint Service General Purpose: M50	M12986	Mask Chemical Biological: M40	M12418	58,202	X	
Mask Chemical-Biological: Combat Crewman: M51	M13236	Mask Chemical Biological: Combat Vehicle M42	M18526	2,624	X	
Maneuver Combat Vehicles						
Carrier Personnel Full Tracked: Armored (RISE)	C18234	Carrier Command Post: Light Tracked	D11538	9	X	
		Carrier Personnel Full Tracked: Armored	D12087	6	X	
Fighting Vehicle: Full Tracked Infantry High Survivability (IFV)	F40375	Operation Desert Storm (ODS) Situational Awareness (SA): M2A2	P19727	46	X	
Fighting Vehicle: Full Tracked Cavalry High Survivability (CFV)	F60530	Operation Desert Storm (ODS) Situational Awareness (SA): M3A2	P19795	4	X	
M2A2ODS for Engineers	M31793	Fighting Vehicle: Full Tracked Infantry High Survivability (IFV)	F40375	2	X	
Mobile Gun System (MGS)	M57720	Infantry Carrier Vehicle (ICV)	J22626	18	X	
Recovery Vehicle Full Tracked: Heavy M88A2	R50885	Recovery Vehicle Full Tracked: Medium	R50681	8	X	
Soldier Systems						
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-6	M74849	Target Locator Module	T27471	659	X	
Soldier Weapons						
Launcher Grenade: M320 *	L03621	Launcher Grenade 40mm: Single Shot Rifle-mtd Detachable W/E	L44595	466	X	
		Launcher Grenade: M203A2	L69012	219	X	
Launcher Grenade: M320A1 *	L69080	Launcher Grenade: M203A2	L69012	1,026	X	
Machine Gun: Caliber .50 HB Flexible (Ground & Vehicle)	L91975	Machine Gun: Caliber .50	M39331	1,855	X	
Machine Gun: 5.56mm M249	M09009	Machine Gun: 5.56mm M249 Light	M39263	313	X	
		Machine Gun: 7.62mm M240B	M92841	87	X	
Machine Gun: 5.56mm M249 Light	M39263	Machine Gun: 5.56mm M249	M09009	2,222	X	
Machine Gun: Caliber .50	M39331	Machine Gun: Caliber .50 HB Flexible (Ground & Vehicle)	L91975	2,343	X	
Machine Gun: 7.62mm M240L	M92454	Machine Gun: 7.62mm M240B	M92841	728	X	
Strike						
Fire Support Team Vehicle: Bradley (BFIST)	F86571	Carrier Personnel Full Tracked: Armored Fire Support	C12155	1	X	
Knight: Armored	K29708	Knight: M707	S50205	4	X	
Range Finder-Target Designator: Laser AN/PED-1	R60282	Target Designator Set: Electro Optical (GLLD)	T26457	21	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 2016 Qty	Deployable?	
					Yes	No
Trucks						
Truck Ambulance: 2-Litter Armored HMMWV	T38707	Truck Ambulance: 4-Litter Armored HMMWV *	T38844	2	X	
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	Truck Ambulance: 2-Litter Armored HMMWV	T38707	18	X	
Truck Cargo: Heavy PLS Transporter 15-16.5 ton w/MHE *	T41067	Truck Palletized Loading: M1074A1	T55236	15	X	
Truck Cargo: 5-ton wo/Winch *	T41515	Truck Cargo: MTV LWB W/E	T61704	2	X	
		Truck Cargo: MTV W/E	T61908	176	X	
		Truck Cargo: Drop Side 5-ton 6X6 W/E	X40794	5	X	
Truck Wrecker: Tactical HEMTT W/W *	T63093	Truck Wrecker: M984A4	T63161	234	X	
Truck Wrecker: M984A4	T63161	Truck Wrecker: Tactical HEMTT W/W *	T63093	46	X	
Truck Cargo: 8X8 HEMTT w/LHS *	T96496	Truck Palletized (LHS): M1120A4	T55054	1,636	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	813	569	varies	$4,513,600,000	UH/HH-60M helicopters, classified as Critical Dual Use (CDU) items, replace UH/HH-60A helicopters in ARNG formations. Equipment on-hand (EOH) with substitutes will be 100% but the projected dates for H-60A divestiture and H-60M buyout will be FY 2025 and FY 2027, respectively. H-60As are being modernized by the procurement of H-60Ms, cascades of UH-60Ls, and the A-A-L conversion line.
2	Assured Mobility	19,079	3,022	varies	$200,000,000	This category includes countermine, firefighting, explosives ordnance disposal (EOD), and bridging systems. Family of Boats and Motors (FoBaM), bridging systems, and Operations Kits are critical needs to support CDU requirements for homeland security. The current on-hand equipment is aging and requires modernization, and the current Headquarters, Department of the Army (HQDA) 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)	293	287	varies	$251,000,000	The Nuclear, Biological, and Chemical (NBC) Force Protection Portfolio consists of systems to support chemical, biological, radiological, and nuclear activities. Current on-hand is six CBPS M8 series. The delivery of four systems for ARNG was projected for FY 2014, but did not happen.
4	Semitrailer: Flatbed 34-ton & 25-ton	5,084	1,070	$173,009	$185,119,630	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 an Army contract to purchase trailers.
5	High Mobility Multipurpose Wheeled Vehicle (HMMWV) Ambulance Recapitalization	1,762	381	$333,000	$126,873,000	The ARNG used NGREA funding to purchase the 500 HMMWV ambulance shortfall. By June 2015, the ARNG will achieve 100% of the ambulance requirement. Unfortunately, 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	Load Handling System Compatible Water Tank Rack (HIPPO)	1,344	882	$131,839	$116,281,998	The HIPPO replaces the legacy semitrailer-mounted fabric tank (SMFT). The HIPPO is a 2,000 gallon potable water tank that enhances and expedites the delivery of bulk potable water into the division and brigade areas, and supports operational and domestic mission requirements. It provides the Army with the capability to receive, store, and distribute potable water utilizing tactical trucks. The total shortage cost in this table reflects the cost of modernizing the ARNG existing potable water systems.
7	Palletized Loading System (PLS)	2,381	470	$360,000	$169,200,000	Recapitalization is the current strategy to modernize this fleet. The recapitalization program scheduled to go under contract in November 2015 will allow us to recapitalize M1074 PLS systems to M1075 systems. Goal is to recapitalize enough to reach 50% modernized in accordance with the Army Modernization Strategy.
8	Construction Engineer Equipment	11,281	1,692	varies	$82,000,000	This category includes heavy cranes, dozers, graders, hydraulic excavators, 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 vendors' business. The lengthening of fielding directly impacts ARNG modernization efforts. This portfolio has used past NGREA funding to improve modernization goals. The Army's Brigade Engineer Battalion Force Design Update will double the number of engineers in each of its Brigade Combat Teams (BCTs).
9	Assault Kitchen (AK)	994	435	$52,500	$22,837,500	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 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.
10	Multi-Temperature Refrigerated Container System (MTRCS)	467	139	$140,000	$19,460,000	The MTRCS replaces non-tactical legacy Reefer Vans. The MTRCS provides the capability to refrigerate and freeze perishable and semi-perishable food and medical supplies with dual evaporators and a moveable partition allowing division into two compartments. The ARNG has invested prior NGREA funding for procurement of MTRCS.

III. Army Reserve Overview

A. Current Status of the Army Reserve

1. General Operational Overview

Top Army Reserve Focus Areas

- Sustain Procurement Funding Rates
- Modernize Light and Heavy Tactical Wheeled Vehicle (TWV) Fleets
- Modernize Echelons Above Brigade (EAB) Liquid Logistics Capabilities
- Modernize and Fill Shortages in EAB Bridging and Engineering Capabilities
- Modernize Critical Dual Use (CDU) Items in support of Homeland Defense

The Army Reserve provides trained Soldiers and cohesive units to enable decisive action for Joint Forces and is seamlessly integrated in responding to the needs of the Army and the Nation. As a critical component of our Nation's defense, the Army Reserve is designed to provide specialized units not found anywhere else in the Total and Joint Forces. This includes sustainment, medical, transportation, engineering, and cyber capabilities too expensive to maintain in the Active Component (AC) but necessary for major operations whether at home or abroad. Since September 11, 2001, more than 275,000 Army Reserve Soldiers have mobilized and deployed globally in direct support of Army and Joint Forces. The Army Reserve remains committed to providing a complementary force to meet the demands of a complex global environment. As such, adequate funding for equipping the Army Reserve with the most modern equipment remains essential in ensuring that unique echelons above brigade (EAB) capabilities are interoperable and readily available as a vital component of the operational force.

a. Status of the Army Reserve as an Operational Force

The Army Reserve is an enduring operational force and the premier force provider essential to successfully executing planned and emerging missions at home and abroad. The majority of the Army's Maneuver Support and Maneuver Sustainment Support EAB capabilities reside within the Army Reserve. Key enablers include 66 percent of quartermaster units, 59 percent of medical assets, 43 percent of transportation units, 30 percent of engineers, and 24 percent of military police. Consistent with the Secretary of Defense's Total Force Policy, the Army Reserve mobilizes an average of 24,000 Soldiers annually for Total and Joint Forces in support of overseas contingency operations (OCO), homeland defense (HD), and defense support of civil authorities (DSCA).

b. Homeland Defense and Defense Support of Civil Authorities

The National Defense Authorization Act of 2012 authorized involuntary mobilization of Army Reserve Soldiers to support Federal or state governments in time of a serious natural or manmade disaster, accident, or catastrophe. As part of the Total Force, the Army Reserve maintains the majority of EAB units designed to provide support to combat units. Domestically, these same capabilities help protect lives, save lives, relieve human suffering, and minimize property damage in HD and DSCA missions throughout the fifty states and four territories with the ability to cross state boundaries. The Army Reserve is geographically dispersed across the Nation and ideally suited to provide responsive lifesaving and life-sustaining support to a lead Federal agency. Army Reserve units rely on equipment categorized as Critical Dual Use (CDU) equipment that supports contingency operations as well as HD and DSCA missions. Of the total Army Reserve CDU items identified, over 90 percent of the CDU items have an equipment on-hand fill rate of at least 89 percent. This past year, the Army Reserve employed CDU capabilities

in providing support to civilian authorities and Joint Forces to fight wildfires, conduct search and rescue missions, and aide U.S. Customs and Border Protection efforts to protect national borders. The Army Reserve requires additional support to fill unfunded modernization shortfalls to further ensure unique lifesaving and life-sustaining capabilities are readily available and responsive in supporting HD and DSCA.

2. Status of Equipment

a. Equipment On-hand

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 2014, the Army Reserve equipment on-hand (EOH) posture improved to 87 percent due to new procurement and the redistribution of equipment. The equipment on-hand posture for CDU items to support HD and DSCA remains at 89 percent filled. When excluding authorized substitutes and approved in-lieu of items, the Army Reserve's overall EOH is 80 percent. The redistribution of equipment, to include redeploying equipment completing reset, is providing a cost-effective near-term solution for filling equipment shortages in a period of fiscal constraint. The Army Reserve's increased use of legacy systems as substitutes continues to challenge our ability to afford long-term sustainment costs and risks interoperability of critical enabling capabilities essential to the operational force. Substitute items consisting of multiple model variations further challenge efforts to affordably maintain aging fleets and sustain readiness.

b. Average Age of Major Items of Equipment

Modernization of legacy equipment fleets is a top priority for controlling increasing sustainment costs for aging systems surpassing their economic useful life. Over time, the Army Reserve has recapitalized and procured more modern systems essential in providing enabling support to the Total Force. Recapitalization programs restore equipment back to "zero miles or a like-new" condition. Recapitalization programs were successful in modernizing construction engineering capabilities and heavy tactical wheeled vehicles. To help illustrate these modernization shortfalls, the Army Reserve has the M48-mounted Armored Vehicle Launch Bridge (AVLB) manufactured in the 1950s and the M60-mounted AVLB manufactured in the 1960s. Table 2-10 highlights the average age of the oldest major equipment items in the Army Reserve.

Table 2-10. Army Reserve Top Legacy Equipment

Nomenclature	Line Item Number	Average Age (years)
Armored Vehicle Launch Bridge	L43664 & C20414	38
HMMWV Ambulance M997A3	T38844	26
Bridge Erection Boat	B25476	25
Trailer Tank Bulk Petroleum 5 & 7.5K	S10059 & S73119	23
Truck Tractor M915	T61103	21
Heavy Expanded Mobility Tactical Truck (HEMTT) Cargo	T39654	20
Common Bridge Transport	C33925	16

c. Compatibility of Current Equipment with the Active Component

Extended procurement and fielding timelines are creating disparity in Army Reserve equipping and modernization levels. This introduces a tiered procurement process that further exacerbates battlefield commonality with the Total Force. As a result, the Army Reserve lags two to three generations behind the most modern systems and platforms fielded to other formations. The Joint Light Tactical Vehicle (JLTV) and UH-60L Digital-version helicopter are prime examples of tiered procurement that delays fielding modernized equipment to the Army Reserve for several years after delivering the most modern systems to other Army components. The Army Reserve is projected to begin fielding JLTV and UH-60L Digital in FY 2022 and FY 2030 respectively.

d. Maintenance

Readiness of equipment and enabling systems will degrade with funding reductions in depot maintenance. Army Reserve maintenance funding has decreased from a high of $247M in FY 2012 to $59M per year in FY 2014 through FY 2016. Further reductions will delay equipment inducted into depot-level rebuild programs and impact unit readiness. Reductions in depot maintenance capabilities will defer critical cost-savings measures in extending the service life of legacy equipment before surpassing its economic useful life. For example, the Army Reserve's bridging capability dates back to the Vietnam era and is three generations behind more modern equipment fielded in other formations. The AVLB with an M-60 chassis from the 1960s is well beyond its economic useful life and is too costly to maintain. The depot cost to rebuild the AVLB engine and drive train exceeds $700K. The cost to operate and sustain the AVLB equals the replacement cost for the new Joint Assault Bridge system scheduled for low-rate production in the near future, suggesting a reprioritization to accelerate production and delivery for the Army Reserve. Funding shortages in depot maintenance compounds the impact on readiness with a reduced capacity to produce rebuilt systems necessary to control increasing sustainment costs.

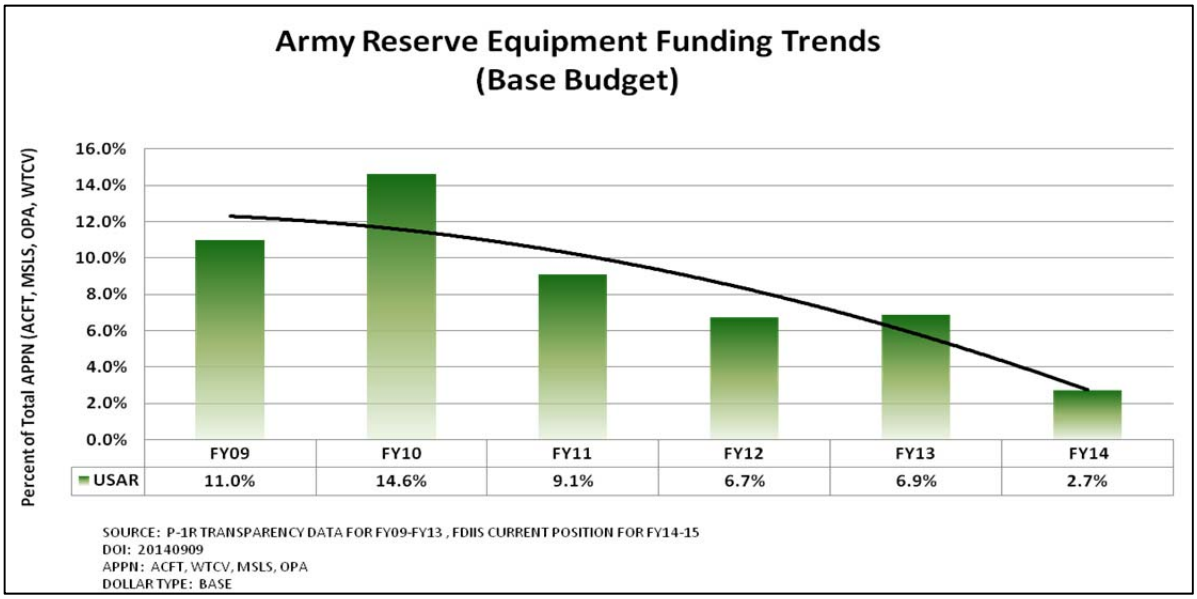
e. Modernizing Critical Army Reserve Capabilities

The Army Reserve possesses critical EAB maneuver support and maneuver sustainment support capabilities vital for Army Total Force operations at home and abroad. These unique capabilities include petroleum transportation and distribution (90 percent); general supply (80 percent); medical (59 percent); military police (24 percent); military intelligence (26 percent); and engineer and mobility (30 percent). Equipment fielded to these formations must be the most modern to maintain full interoperability in providing maneuver support and maneuver sustainment support capabilities to the Total Force. The Army Reserve's bulk petroleum assets enable the Army to fulfill its duties as the executive lead agent in providing petroleum to the Joint Force. 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. This equipment includes fuel tankers (5K and 7.5K gallon capacity), fuel supply points, fuel storage, and tactical pipelines, many of which are approaching or exceeding their economic useful life without a bridging strategy for modernization.

3. Budget

The enactment of the 2011 Budget Control Act (BCA) reduced procurement funding for the Army Reserve by 29 percent ($611M to $431M) from FY 2013 to FY 2014. Reductions in the FY 2014 budget adversely impacted the Army Reserve with the restructuring and delaying of key enabler programs. As a result, momentum gained in modernization has declined and poses a challenge in achieving interoperability with Joint Forces. Under the Bipartisan Budget Act, passed in FY 2013, the Army Reserve is anticipating a slight increase in the President's Budget for FY 2015. Despite expecting to receive a minor increase in the FY 2015 budget, procurement funding for modernizing the Army Reserve is considerably less than what was received during the peak funding years. As recently as FY 2010, the Army Reserve received 14.6 percent of the Army's base budget for equipment procurement as compared to 2.7 percent in FY 2014. Establishing a sustained funding rate in the base budget is critical to executing a viable strategy for modernizing enabling platforms, which is mission essential for the Army Reserve to complement the Total Force. 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 Army Reserve's Equipping Strategy is synchronized with the Army's Equipment and Modernization Strategy and supports the Army's Equipment Program in support of the 2015 President's Budget. In concert with the stated strategies, the Army Reserve's desired end-state is to achieve and sustain a modernized operational force that is fully interoperable with Joint Forces. Accomplishing this end-state entails increasing EOH readiness levels and improving equipment modernization while achieving affordability in long-term sustainment costs. The Army Reserve will apply a multifaceted approach to modernizing equipment through new procurement, recapitalization programs, and the redistribution of more modern equipment. Depot maintenance and divestment of obsolescent equipment will enhance readiness while restoring sustainment cost to affordable levels. The use of common driver simulations will further mitigate

any training readiness shortfalls attributable to deficits in equipment modernization. Equitable distribution of procurement funding in the base budget, to include the current funding year, is essential to executing a balanced strategy for ensuring the Army Reserve remains an operational force that is versatile and capable of supporting the Army's role in the National Defense Strategy.

5. Equipping Successes

In FY 2013, the Army Reserve received newly procured equipment worth $957M to fill equipment shortages and modernization requirements while divesting $427M in obsolescent equipment. Equipment on-hand increased to 87 percent and the modernization of Army Reserve equipment increased to 76 percent due to process adjustments. Modest improvements were made in modernizing transportation, engineering, and field logistics capabilities with the added support of NGREA funding, supplementing over 15 percent ($522M) of the total procurements in the base budget from FY 2011 to FY 2013. The Army Reserve started converting AH-64 Apaches to UH-60 Blackhawks ahead of the Army's Aviation Restructure Initiative. The Army Reserve delivered 650 M1077 flat racks in May 2010 for operations in support of Operation Enduring Freedom with promised payback under DODI 1225.06; the Army will return the last of these borrowed flat racks to the Army Reserve in FY 2015. While these examples represent successes in equipping the Army Reserve, challenges remain with budget reductions resulting from enacting the BCA.

B. Future Years Program (FY 2016–FY 2018)

1. New Equipment Procurements

a. Base Budget

From FY 2010 to FY 2018, the Army Reserve will undergo considerable downward trends in equipment funding in the base budget (including supplements and Congressional additions) ranging from a record high of 14.6 percent ($1.7B) to a low of 2.5 percent ($403M) projected in FY 2018. The Army Reserve expects the funding trend to flatten in future years with funding levels projected at 3.1 percent ($428M) in FY 2016, 3.0 percent ($425M) in FY 2017, and 2.5 percent ($403M) in FY 2018. The unintended consequence of this trend has resulted in the tiered procurement of EAB enabling programs unique to the Army Reserve. The shifting budget priorities directly attributed to fiscal uncertainty are resulting in tiered procurement and delayed modernization of the Army Reserve.

b. National Guard and Reserve Equipment Appropriation

NGREA funding has been an invaluable resource that enabled the Army Reserve to procure priority readiness items not funded in the base budget. From 2012 to 2014, Congress appropriated $560M in NGREA funding that the Army Reserve used to enhance its efforts to close underfunded modernization gaps. This support proved vital following the implementation of the BCA, which disproportionately impacts the Army Reserve when competing for limited resources. NGREA appropriations in 2014 totaled $175M and represented 30 percent of the total procurement funding for the Army Reserve. NGREA has enabled the Army Reserve to fund key equipment gaps that are critical for sustaining interoperability with the Total Force and maintaining momentum achieved in establishing an operational Army Reserve.

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 2016–FY 2018.

3. Anticipated Withdrawals from Army Reserve Inventory

The Army Reserve does not anticipate equipment withdrawals of major end items. The Army will ensure that withdrawals are completed in accordance with DODI 1225.06.

4. Equipment Shortages and Modernization Shortfalls

The total FY 2018 documented on-hand shortfall to modernize the Army Reserve equals $12.3B. The Army Reserve's total shortage value with substitute items is over $9.7B. The following sections highlight Army Reserve equipment shortages and modernization shortfalls for each of the Army Reserve Equipment Capability Categories. See Annex A at the end of this chapter narrative for an explanation of the embedded tables in these sections.

a. Aviation Portfolio

The Aviation Portfolio consists of a mix of fixed wing, lift, cargo, and attack rotary-wing aircraft, of which, approximately 10 percent of the lift and 42 percent of the fixed-wing aircraft reside in the Army Reserve. Army Reserve aircraft are considered CDU items in support of HD and DSCA missions. Total resources required to fill modern documented shortfalls within the Army Reserve's aviation portfolio exceed $1.9B (see Table 2-11).

Table 2-11. Aviation Capabilities Overview

Capability	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Rotary Wing	137	41	96	70%	$1.7B
Fixed Wing	59	14	45	76%	$173M

i. Rotary Wing Aircraft

The Army Reserve's rotary wing fleet provides aeromedical evacuation, lift, and cargo capabilities with an average age of 15 years.

- Aeromedical Evacuation: three Air Ambulance Companies totaling 45 HH-60L and HH-60M Blackhawk helicopters. In FY 2018, the total number of HH-60L/M aircraft increases to 75 with the addition of two Air Ambulance Companies.
- Lift: 60 UH-60L Blackhawk helicopters are required in two Assault Battalions (formerly AH-64D Attack Battalions).
- Heavy Lift Cargo: three Heavy Helicopter Companies require a total of 36 CH-47Fs.

ii. Fixed Wing Aircraft

The Army Reserve fixed-wing fleet consists of 64 aircraft, 48 C-12s and 16 UC-35 aircraft with an average age of 23 years.

Investments in New Procurement and Modernization: Modernization and new procurement of Army Reserve aircraft is reliant on Congressional funding in the base budget. FY 2013 to FY 2014 investments in Army Reserve aircraft totals $210M. Funding in the base budget from FY 2015 to FY 2018 is projected at $385M (see Table 2-12).

Table 2-12. Aviation Procurement Funding

Funding Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Base Budget (P-1R)	$205M	$5M	$315M	$21M	$20M	$29M

Impact Statement for Aviation: Aviation modernization shortfalls in the Assault Battalions are a primary concern as the Army Reserve converts AH-64D Apaches to UH-60L Blackhawks leaving an un-resourced shortfall of $144M (12 UH-60L), thus creating capability gaps and degrading lift capacity in support of HD and DSCA missions. The Army Reserve's top critical documented shortages within the Aviation Portfolio are listed in Table 2-13 below.

Table 2-13. Aviation Top Equipment Shortages

Capability	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
CH-47F*	24	11	13	54%	$386M
UH-60A*	8	0	8	100%	$136M
UH-60M*	60	0	60	100%	$1B
HH-60M*	45	30	15	33%	$255M
C-12 Airplane*	43	7	36	84%	$110M
UC-35 Utility Jet	16	7	9	56%	$63M

* Critical Dual Use Equipment

Focal Points for Army Reserve Aviation Portfolio:

- 100 percent (3 of 3) of Heavy Helicopter Companies are equipped with the 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.
- In FY 2018, the conversion of AH-64 Apaches to UH-60L Blackhawks will be complete with 100 percent of aircraft being be available as CDU items for HD and DSCA missions.
- Army Reserve fixed-wing fleet (average age 25 years) is a candidate for modernization.

b. Sustainment Transportation Portfolio

The majority of the Army's EAB transportation capability resides within the Army Reserve. The portfolio consists primarily of motor transport and watercraft capabilities with the Army Reserve providing 43 percent of motor transport and 55 percent of all watercraft capabilities to the Army.

i. Motor Transport.

The tactical wheeled vehicle (TWV) fleet consists of light, medium, and heavy vehicles. The Army Reserve owns 43 percent of the total Army's transportation units, 30 percent of the real on-hand inventory have an average age exceeding the economic useful life of 15–25 years of age. The TWV serves as the Army Reserve's primary system for delivering unique capabilities with 78 percent listed as CDU items for supporting HD and DSCA missions. Total resources required to fill documented shortages and close modernization gaps within the Army Reserve's TWV fleet exceed $3B (see Table 2-14).

Table 2-14. Tactical Wheeled Vehicles Capabilities Overview

Capability	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Light Tactical Vehicles	18,174	6,766	11,408	63%	$1.86B
Medium Tactical Vehicles	6,212	4,130	2,082	34%	$538M
Heavy Tactical Vehicles	5,678	4,031	1,647	29%	$693M
Trailers	21,753	20,030	1,723	8%	$192M

Investments in New Procurement and Modernization: In FY 2013 and FY 2014 the Army's base budget procurement funding ($82M) accounts for only 26 percent of the total TWV portfolio investments ($317M), with NGREA funding ($235M) accounting for the remaining 74 percent. The Army Reserve invested $164M in FY 2013 and is projected to invest $71M in FY 2014 to modernize the TWV fleet through NGREA funding. From FY 2015 to FY 2018, $187M is projected in the base budget to improve modernization levels within the TWV fleet (see Table 2-15 below). In the last five years, the Army Reserve achieved momentous gains in modernizing the TWV fleet largely due to Congressional support through NGREA.

Table 2-15. Tactical Wheeled Vehicles Procurement Funding

Funding Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Base Budget (P-1R)	$36M	$46M	$36M*	$94M*	$33M*	$24M*
NGREA Investment	$164M	$71M*				

* Projected

Impact Statement for Motor Transport: Budget trends are creating funding imbalances impacting readiness and delaying efforts to fill modernization shortages of tactical wheeled vehicles. Consequently, delays in new procurement and modernization are increasing sustainment costs required to maintain readiness levels of the legacy TWV fleet, which risks interoperability with Total and Joint Forces. The most significant challenges impacting readiness and interoperability of the Army Reserve's TWV fleet are critical equipment shortages and

modernization gaps within the light and heavy vehicle fleets. Establishing parity in capital investments is crucial in supporting efforts to improve readiness and achieve interoperability with the Total and Joint Forces. Top equipment modernization shortages are listed in Table 2-16 below.

Table 2-16. Tactical Wheeled Vehicles Top Equipment Shortages

Equipment	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
HMMWV Ambulance M997A3*	382	0	382	100%	$125M
HMMWV (Armor Capable)	5,968	1,768	4,200	70%	$573M
HEMTT (Cargo/Fuel Tanker)*	2,929	2,252	677	23%	$237M
Joint Light Tactical Vehicle (JLTV)	6,306	0	6,306	N/A	TBD

* Critical Dual Use Equipment

Focal Points for Motor Transport:

- Light Tactical Vehicles: The Army Reserve will retain legacy HMMWVs in the inventory beyond 2040 without a scheduled modernization program to extend the economic useful life and bridge modernization gaps.
  - HMMWV Ambulance: The JLTV does not include an ambulance variant. There is no identified bridging strategy to fill shortages and modernize HMMWV ambulances.
  - Armor Capable HMMWV: The Army modernization program expired in FY 2010. Multiple variants are compounding modernization challenges for the armor capable fleet.
  - JLTV: The projected JLTV fielding schedule for the Army Reserve begins four years after starting full rate production. By FY 2032, the Army Reserve is expected to achieve approximately 25 percent of its total JLTV requirements.
- Heavy Tactical Vehicles: The contract to modernize the HEMTT fleet ended in FY 2013 with un-resourced shortfalls. The contract reopens in FY 2015 without funding programmed in the base budget.
  - HEMMT Cargo: Only 27 percent of the most modern cargo truck is on-hand with no funding projected in the base budget.
  - HEMMT Fuel Tanker: Only 52 percent of the most modern fuel trucks are on-hand with no funding projected in the base budget.
  - Petroleum Tanker Trailer: The Army Reserve owns over 90 percent of the Army's bulk petroleum units. The average age of line-haul fuel tankers exceeds 21 years of age.

ii. Watercraft

Army Reserve watercraft comprise 55 percent of the Army's total watercraft capability with 70 percent identified as critical dual-use items. No other Service is equipped with this asset. Army watercraft is low density, but provides a critical capability to the Total and Joint Forces. As such, the service life extension program (SLEP) and modernization of the fleet are key and essential to operational availability. Resources required to modernize the Army Reserve fleet exceed $492M.

Impact Statement: Underfunding near-term service life extension and modernization programs risk degrading the readiness of Army Reserve watercraft capabilities. As a result, the aging watercraft fleet hinders operational availability and risks achieving full interoperability in supporting the Total and Joint Forces.

Focal Points for Watercraft:

- The average age of the Landing Craft Utility (LCU) fleet is 24 years. Total resources required to complete SLEP exceeds $450M.
- The Army Reserve LCU is projected to be 50 percent modern by FY 2022. The LCU is a CDU item essential to supporting HD and DSCA.
- The Landing Craft Mechanized fleet is over 40 years old. A replacement platform was identified, but is not yet available for procurement.

c. Mobility and Engineering Portfolio.

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 $900M in documented requirements and over $1.2B when including undocumented modernized requirements. See Table 2-17.

Table 2-17. Mobility Capabilities Overview

Capability	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Assault Bridging	102	0	102	100%	$510M
Float Bridging*	630	0	630	100%	$315M
Counter Explosive Hazard*	3,026	912	2,114	70%	$200M
Construction*	532	213	319	60%	$128M
Support Systems*	2,370	393	1,977	83%	$97M

*Select Systems

Investments in New Procurement and Modernization: For FYs 2013 and 2014, NGREA represented 58 percent of the total investment for the portfolio. From FYs 2015 to 2018, the base budget only funds 36 percent ($320M) of the total documented requirements, thus leaving 64 percent ($580M) of the shortfall unfunded. Although challenges remain, recent investment in armored earthmoving equipment has significantly improved the readiness posture of Army Reserve construction capabilities.

Table 2-18. Mobility Procurement Funding

Procurement Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Base Budget (P-1R)	$23M	$28M	$35M*	$71M*	$87M*	$127M*
NGREA Investment	$30M	$40M*				

*Projected

Impact Statement for Mobility and Engineering: The near-term base budget strategy focuses on resetting Brigade Combat Teams, which assumes risk in EAB enabler equipment acquisition. Extending procurement timelines for mission essential mobility equipment is directly impacting

the Army Reserve readiness posture and creating capability gaps with the Total Force. Top engineering and mobility equipment modernization shortages are listed in Table 2-19 below.

Table 2-19. Mobility Top Equipment Shortages and Modernization Challenges

Equipment	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Joint Assault Bridge*	102	0	102	100%	$510M
Common Bridge Transport*	504	0	504	100%	$202M
Medium Mine Protected Vehicle	264	0	264	70%	$145M
Bridge Erection Boat*	126	0	126	60%	$113M
Heavy Crane (50 Ton)	49	0	49	100%	$54M
Hand Held Mine Detection	2,762	912	1,850	67%	$46M

*Critical Dual Use Equipment

Focal Points for Mobility and Engineering:

- Counter Explosive Hazard Vehicles: The Army Reserve owns 56 percent of the total Army EAB route clearance capability, but is projected to field less than 50 percent of the mission critical Medium Mine Protected Vehicle requirement by FY 2018.
- Float Bridging: Only 11 percent (1 of 9) Multi-Role Bridge Companies is projected to field modern Common Bridge Transports and Bridge Erection Boats by FY 2018.
- Assault Bridging: Only 22 percent (2 of 9) Mobility Augmentation Companies is projected to field the Joint Assault Bridge by FY 2018.

d. Field Logistics Portfolio.

This portfolio comprises maintenance, medical, supply, and liquid logistics capabilities, the majority of which are critical dual-use. Over 50 percent of the Army's logistical capacity resides in the Army Reserve. Unique capabilities include over 90 percent of the total Army's bulk petroleum support, 80 percent of bulk supply, and 59 percent of medical. Resources required to fill documented shortfalls in modernizing field logistics exceed $1B. See Table 2-20 below.

Table 2-20. Field Logistics Capabilities Overview

Capability	FY 2018 Required	FY 2018 Modern On-hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Liquid Logistics - Petroleum	351	169	182	52%	$184M
Liquid Logistics - Water	3,985	2,150	1,835	46%	$125M
Material Handling Equipment	1,245	338	907	73%	$122M
Supply, Services & Maintenance	21,108	16,180	4,928	23%	$335M
Medical Field Systems	26,320	16,936	11,747	45%	$393M

Investments in New Procurement and Modernization: The Army's FY 2013 base budget accounts for only 52 percent of the total investment for modernizing the Army Reserve's field logistics systems. NGREA funding accounted for the remaining 48 percent of investments in FY 2013. In FY 2013 and FY 2014, base procurement funding was $39M and $35M. The Army

Reserve invested $42M in FY 2013 and is projected to invest another $25M in FY 2014 to modernize petroleum, medical systems, and bulk supply platforms through NGREA funding. From FY 2015 to FY 2018 $121M is projected in the base budget to modernize approximately 12 percent of underfunded field logistics systems leaving an un-resourced shortfall totaling $879M.

Table 2-21. Field Logistics Procurement Funding

Procurement Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Base Budget (P-1R)*	$39M	$35M	$39M*	$26M*	$30M*	$26M*
NGREA Investment*	$42M	$25M*				

*Projected

Significant challenges impacting readiness and interoperability include shortages and modernization gaps within the petroleum delivery and storage capabilities. Critical un-resourced shortages include fuel supply point systems and tankers required to store and deliver bulk fuel. Top equipment modernization shortages are listed in Table 2-22 below.

Table 2-22. Field Logistics Critical Equipment Shortages

Equipment	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Fuel Supply Point 300K & 800K	162	60	102	63%	$135M
Hose Line Outfit Fuel Handling	76	37	39	51%	$18M
Trailer Tank Bulk Petroleum 7.5K	480	400	80	17%	$16M
Trailer Tank Bulk Petroleum 5K*	1,080	1,027	53	5%	$8M
Rough Terrain Container Handler	346	278	68	20%	$59M
Force Provider Module 500 Soldier	6	0	6	100%	$70M

* Critical Dual Use Equipment

Impact Statement: The Army is assuming risk in Field Logistics systems to fund higher priority combat programs. The current fiscal environment is forcing resourcing decisions resulting in tiered procurement of critical EAB logistical capabilities. For example, as the executive agent for bulk petroleum, over 90 percent of the Army's EAB bulk petroleum platforms are in the Army Reserve, and bulk petroleum is considered a lower funding priority. As a result, EAB bulk petroleum platforms are insufficiently resourced for the modernization necessary to maintain interoperability with the Total Force. Shortfalls in EAB bulk petroleum can have major impacts in theaters with an immature and austere economic environment, where host nation support and contracting from commercial sources is inadequate.

Focal Points for Field Logistics:

- The Army Reserve provides over 90 percent of Army bulk petroleum capability with un-resourced requirements exceeding $184M without a bridging strategy to replace legacy platforms.
- The Army Reserve is required to maintain 480 7500-gallon tank trailers beyond FY 2018, but they are not considered modern and exceed their economic useful life.

e. Mission Command (The Network) Portfolio

LandWarNet 2020 and beyond is the Army's end-to-end network that simultaneously supports all Army mission areas. The portfolio consists of four capability areas: transport, applications, enablers, and integration that facilitate joint interoperability. Mission Command equipment shortages and modernization budget shortfalls exceed $2.8B.

Impact Statement: The Army Reserve is generations behind in fielding the most modern mission command systems, thus widening capability gaps 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.

- **Transport Networks:** Tactical radios represent over $1.8B of the overall budget shortfall. The majority of existing radios exceed economic useful life (8-15 years). Priority fielding of emerging technology to maneuver forces further impedes the Army Reserve's ability to maintain interoperability with Joint Forces.
- **Applications:** Army Reserve shortfalls account for over $306M in computer-based command and control applications.
- **Enablers:** Generators and environmental control units account for $138M in total shortfalls. This shortfall is tied to the Army's ongoing effort to field environmentally friendly, renewable power generation systems.

f. Force Protection and Soldier Portfolios

The Army Reserve Force Protection (FP) portfolio consists of Chemical, Biological, Radiological, and Nuclear (CBRN) 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. Total resources required to fill shortages and modernize the FP and Soldier portfolios exceed $1.5B (see Table 2-23 below).

Table 2-23. Force Protection and Soldier Capabilities Overview

Capability	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
CBRN Defense*	141,696	11,228	130,468	92%	$813M
Soldier Systems	204,008	117,544	86,464	42%	$554M
Soldier Weapons	109,111	66,285	42,826	39%	$188M

* Includes CDU items

Investments in New Procurement and Modernization: From FY 2013 to FY 2014 Soldier portfolio investments totaled $14M. Base budget funding from FY 2015 to FY 2018 is projected at $87M. Force Protection (excluding CA/MISO) investments included $21M in base funding and $21M in NGREA funding to modernize contamination avoidance capabilities. From FY 2015 to FY 2018, $17M is projected in base funding (see Table 2-24 below).

Table 2-24. Force Protection and Soldier Procurement Funding

Funding Source	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Soldier Base Budget (P-1R)	$7M	$7M	$16M*	$23M*	$26M*	$22M*
FP Base Budget (P-1R)	$21M			$9M*	$4M*	$4M*
FP NGREA Investment	$3M	$18M				

* Projected

The Army Reserve's top critical shortages within the Force Protection and Soldier portfolios are listed in Table 2-25 below.

Table 2-25. Force Protection and Soldier Top Equipment Shortages

Equipment	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Nuclear Biological Chemical Recon Vehicle	96	4	92	96%	$738M
Chemical/Biological Protective Shelter (CBPS)*	108	2	106	98%	$66M
Common Remotely Operated Weapons Station (CROWS)**	1,134	0	1,134	100%	$268M
Machine Gun: Caliber 50 (M2)	4,887	254	4,633	95%	$69M
Rifle 5.56mm: M4	51,825	24,890	26,935	52%	$56M

* CDU Items, ** Procured with OCO funding

Impact Statement for Force Protection: The reduction of funding in Army Reserve FP 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. **Soldier:** CROWS systems were procured with OCO funding, and Army Reserve fielding is projected to be completed by FY 2020. Termination of OCO funding in FY 2016 could potentially impact readiness of Soldier systems for the Army Reserve.

Focal Points for Army Reserve Force Protection and Soldier Portfolios:

- The lack of funding of the full requirement of the Chemical Biological Protective Shelter will degrade our ability to support HD and DSCA missions in a contaminated environment.
- The Army Reserve is projecting a minor increase in funding for weapons systems between FY 2016 and FY 2018.

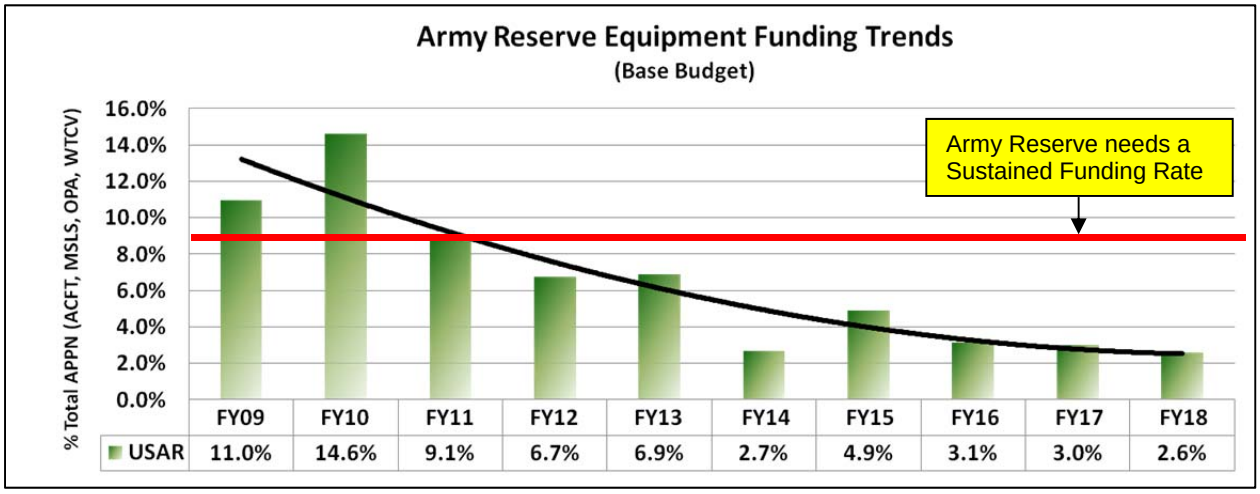
C. Summary

Over the past decade, modest improvements were achieved in modernizing the Army Reserve as a part of the operational force. Equipment on-hand increased to 87 percent with equipment considered modern improving to 76 percent. Despite improvements, budget reductions pose a critical challenge for the Army Reserve to close modernization gaps. New procurement funding in the base budget for EAB programs unique to the Army Reserve was disproportionately reduced by 29 percent ($611M to $431M) from FY 2013 to FY 2014. Simultaneously, the value

for modern shortfalls increased 28 percent from $8.8B to $12.3B. As a result, budget priorities have shifted and risk modernization gains with new procurement funding for the Army Reserve reverting back to pre-9/11 funding levels and lower. From 1991 to 2001, the Army Reserve averaged less than 6 percent of the President's Budget (P-1R) submission. In FY 2014, new procurement funding for the Army Reserve equals 2.7 percent of the President's Budget with approximately 19 percent of the Total Force in the Army Reserve. Decreasing resources further impedes efforts to close modernization gaps. As a result, the Army Reserve consistently trails the total Army in modernization and EOH thus creating compatibility risk in formations equipped with less modern equipment. Near-term strategies to fill EOH shortages include Army redistribution of excess AC equipment. This strategy presents a funding challenge for the Army Reserve in the form of additional maintenance costs at a time when depot maintenance funds are in steep decline.

The Army Reserve appreciates investments made by Congress in support of modernizing the force and improving interoperability with Joint Forces. A steady state funding rate commensurate with projected requirements is essential to control sustainment cost and ensures the Army Reserve's unique capabilities are interoperable with the Total Force (see Figure 2-2 below).

Figure 2-2. Army Reserve Funding Trends



Continued Congressional investment is essential in preserving the Army Reserve as an operational force while ensuring unique lifesaving and life-sustaining capabilities are available for enabling a strong national defense and protecting national interests at home and abroad.

Annex A
Explanation of Army Reserve Embedded Equipment Tables

Equipment	FY 2018 Required	FY 2018 Modern On-Hand	FY 2018 Modern Shortage	FY 2018 % Modern Unfunded	FY 2018 Unfunded Requirement
Joint Assault Bridge*	102	0	102	100%	$510M

Equipment—General nomenclature of the equipment item.

FY 2018 Required—Based on the forecasted requirement at the end of FY 2018.

FY 2018 On-hand—Based on the forecasted on-hand at the end of FY 2018 (not shown in the table).

FY 2018 Modern On-hand—Removes equipment considered not modern from the *FY 2018 On-hand* number. Modern equipment is defined as the most current equipment item that meets global mission requirements.

FY 2018 Modern Shortage—*FY 2018 Required* minus *FY 2018 Modern On-hand.*

FY 2018 Unfunded Requirement—Average estimated cost of the equipment multiplied by the *FY 2018 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 2016 unit cost estimates are provided by the Military Departments.

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Air Defense							
Center: Communications Operations	C18033	$3,300,000	0	1	3	3	5
Aircraft							
Airplane Cargo Transport: C-12D	A29812	$1,967,301	4	4	4	4	0
Airplane, Utility: UC-35B	A05015	$7,000,000	5	5	5	5	0
Airplane, Cargo Transport	BA108Q	$2,150,000	6	6	6	6	0
CH-47F Improved Cargo Helicopter *	C15172	$29,682,872	0	5	6	11	24
Helicopter Cargo Transport: CH-47D *	H30517	$29,682,872	34	34	34	34	0
Helicopter Utility: UH-60A *	K32293	$16,967,644	0	0	0	0	8
Helicopter Utility: UH-60L *	H32361	$16,967,644	65	65	65	65	16
Helicopter Utility: UH-60M *	H32429	$16,967,644	0	0	0	0	60
Helicopter: Attack AH-64D	H48918	$18,389,000	29	29	29	29	0
HH-60L: MEDEVAC Helicopter *	U84291	$16,967,644	5	5	5	5	0
MEDEVAC Helicopter: HH-60M *	M33458	$16,967,644	24	24	30	30	45
Utility Cargo Aircraft: UC-35A *	U05004	$7,000,000	7	7	7	7	16
Airplane Cargo Transport: C-12F *	A30062	$3,068,422	7	7	7	7	43
Small Unmanned Aircraft System: Raven B	S83835	$298,938	46	46	46	46	85
Aviation							
Air Traffic Control Central: AN/TSW-7A *	A27624	$5,789,000	1	1	1	1	1
Command System: Tactical AN/TSQ-221 *	C61597	$3,000,000	1	1	1	1	1
Detecting Set, Laser AN/AVR-2B(V)1	L60482	$229,614	16	16	16	16	129
Dispenser General Purpose: Aircraft M130	D20060	$447,800	0	0	0	0	30
External Stores Subsystem (ESSS): UH-60A	E21985	$676,111	10	10	10	10	113
Hoist High Performance *	H39331	$303,627	6	6	6	6	45
Kit Aeromedical Evacuation: UH-60A *	K40878	$130,839	0	0	0	0	45
Kit Air Transportability: UH-60A	K27251	$25,600	94	94	94	94	129
Radar Set: AN/TPN-31 *	R17126	$3,701,502	0	0	0	0	1
Shelter: Tactical Expandable Oneside	S01291	$224,333	44	44	44	44	111
Tool Set Aircraft Maintenance *	T59439	$3,600,000	0	0	0	0	3
Warning Receiver System Countermeasure: AN/AAR-57	W62187	$447,800	3	3	3	3	15
Warning Receiver System Countermeasure: AN/AAR-57(V)8	W93384	$447,800	0	0	0	0	24
Warning Receiver System, Countermeasure	W62437	$447,800	0	0	0	0	98
Warning Receiver System: Countermeasure AN/AAR-57(V)1	W41457	$447,800	7	7	7	7	42
Warning Receiver System: Countermeasure	W62562	$447,800	0	0	0	0	24
Warning Receiver System, Countermeasure	W55180	$505,000	0	0	0	0	12
Warning Receiver System, Countermeasure: AN/AAR	W62255	$447,800	4	4	4	4	16
Battle Command (Command & Control)							
BTUH 60000 Environmental Control Unit: HD-1240/G	B29108	$12,570	165	165	165	165	1,168

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Carrier Armored Command Post: Full Tracked	C11158	$1,011,652	25	25	25	25	25
Carrier Command Post: Light Tracked	D11538	$1,011,652	27	27	27	27	23
Command System Tactical: AN/TYQ-155(V)1 *	C61290	$103,558	122	122	122	122	147
Command System Tactical *	C40996	$1,011,652	6	6	6	6	6
Computer Set: Digital AN/GYK-62 *	C13866	$16,530	232	232	232	232	426
Computer Set: Digital AN/UYK-128 *	C18378	$31,172	3,376	3,376	3,376	3,376	7,830
Computer System: Digital *	C27963	$19,737	1,668	1,668	1,668	1,668	2,052
Computer System: Digital AN/PYQ-12	C18641	$64,000	151	151	151	151	184
Computer System: Digital AN/GYK-61 *	C18448	$69,488	1,276	1,276	1,276	1,276	1,480
Computer System: Digital AN/UYQ-90(V)2 *	C18278	$18,932	2,232	2,232	2,232	2,232	5,323
Computer System: Digital AN/UYQ-90(V)3 *	C78851	$30,000	490	490	490	490	1,826
Deployment Kit Radio Frequency Identification: AN/PSX-2	D44050	$29,800	241	241	241	241	431
Generator Set: DED 5kW 50/60Hz Skid-mtd	G42488	$19,177	0	0	336	567	1,015
Generator Set: DED 15kW 50/60Hz Skid-mtd	G49966	$23,724	0	0	0	0	389
Generator Set: DED 10kW 50/60Hz: Skid-mtd	G07461	$25,533	0	0	0	0	921
LTT Trailer-mtd: PU-2001 5kW 50/60Hz	L26934	$25,135	0	0	0	0	306
LTT Trailer-mtd: PU-2002 10kW 50/60Hz	L84622	$19,177	0	0	0	0	481
Panel Power Distr: 60Hz 400amp	P60558	$17,711	70	70	70	70	180
Shelter: Nonexpandable LTWR MP Rigid-Wall S788 mtd HMMWV	S01563	$1,011,652	2	2	2	2	19
Trailer-mtd: PP-3105 30kW 50/60Hz 2M200A1	T39917	$47,007	0	0	0	0	67
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	$44,157	0	0	0	0	471
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	$41,800	0	0	0	0	51
Trailer-mtd: PU-2103 60kW 50/60Hz M200A1	T60034	$47,007	0	0	0	0	46
Army Human Resources Workstation *	Z39781	$19,571	960	960	960	960	2,802
Battle Space Awareness							
Central: Communications AN/TSQ-226(V)3 *	C43399	$1,695,937	0	0	0	0	3
Communications System: AN/FSQ-209(V)1	C90649	$9,078,698	0	0	0	0	1
Computer System: Digital AN/PYQ-3	C18312	$32,900	434	434	434	434	490
Computer System: Digital AN/PYQ-8	C77823	$11,900	598	598	598	598	680
Data Analysis Central: AN/MSW-24	D77801	$1,369,000	2	2	2	2	8
Detecting System Countermeasures: AN/MLQ-40(V)4	D04182	$1,997,000	4	4	4	4	16
Digital Topographic System: AN/TYQ-67(V) *	D10281	$1,053,000	5	5	5	5	9
Battle Command Transport Networks							
Antenna: AB-1404/TRC	A81826	$1,066,695	28	28	28	28	30
Battalion Command Post Switching Group: OM-XXX *	B67234	$2,472,271	140	140	140	140	146
Central Office: Telephone Automatic AN/TTC-56(V)3	C20617	$4,081,375	8	8	8	8	10
Communication Equipment: SOMS-B	C58976	$5,000,000	0	0	0	0	8
Computer System: Digital AN/PSQ-17 *	C18380	$394,827	0	0	0	0	20
Joint Node Network (JNN) Central Office Telephone Auto *	J05001	$2,472,271	28	28	28	28	28
Radio Set *	R55336	$8,473	2,443	2,443	2,443	2,443	1,833
Radio Set: AN/PRC-119F(C) *	R83141	$97,565	1,018	1,018	1,018	1,018	1,430
Radio Set: AN/PSC-5 *	R57606	$97,565	230	230	230	230	2,635
Radio Set: AN/VRC-88F(C) *	R67330	$97,565	1,000	1,000	1,000	1,000	1,590

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Radio Set: AN/VRC-89F(C) *	R44999	$97,565	1,226	1,226	1,226	1,226	2,485
Radio Set: AN/VRC-90F(C) *	R68044	$97,565	19,731	19,731	19,731	19,731	29,847
Radio Set: AN/VRC-91F(C) *	R68146	$97,565	2,517	2,517	2,517	2,517	3,731
Radio Set: AN/VRC-92F(C) *	R45543	$97,565	1,667	1,667	1,667	1,667	2,848
Radio Set: Hand-held Radio *	Z01320	$7,700	3,759	3,759	3,759	3,759	4,983
Radio Test Set: AN/GRM-122 *	R36178	$108,000	44	44	44	44	96
Receive Suite: AN/TSR-8 *	R30658	$651,571	5	5	5	5	43
Satellite Communication System: AN/TSC-156 *	S23268	$4,000,000	24	24	24	24	30
Terminal: Satellite Communication AN/TSC-154	T81733	$4,411,733	4	4	4	4	18
Teleconference System: AN/TYQ-122 *	T43146	$2,472,271	37	37	37	37	121
Combat Mobility							
Anti-Personnel Mine Clearing System: Remote Control (M160)	A05002	$2,141,791	0	4	14	18	24
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	$1,156,605	116	116	116	137	126
Bridge Armored Vehicle Launched Scissors: 63-ft (AVLB) MLC 70 *	B31098	$7,645,450	41	41	41	41	102
Bridge Erection Set Fixed Bridge: UK Medium Girder Bridge	C22126	$1,869,741	3	3	3	3	4
Bridge Fixed: Highway Alum UK Medium Girder Bridge 100ft LG L60 *	C22811	$1,869,741	5	5	5	5	8
Bridge Heavy Dry: Supt (HDSB) 40M MLC96 *	B26007	$1,869,741	28	28	28	28	28
Detecting Set: Mine AN/PSS-14	D03932	$24,641	912	912	912	912	2,762
High Mobility Engineer Excavator (HMEE): Type I *	H53576	$328,201	121	121	121	121	124
Instrument Set Reconnaissance and Surveying: AN/TKQ-5	D17191	$40,000	97	102	107	117	377
Interior Bay Bridge Floating *	K97376	$435,703	270	270	270	270	270
Launcher Heavy Dry Support Bridge: HDSB *	L67660	$10,631,000	28	28	28	28	28
Loader Skid Steer: Type III *	L77215	$328,201	401	401	401	401	507
Man Transportable Robotic System (MTRS-RC)	Z01251	$143,000	0	0	3	11	72
Ramp Bay Bridge Floating *	R10527	$525,068	108	108	108	108	108
Tool Kit Pioneer Engineer Squad: Land CLR & Bldg Erection *	W48348	$9,238	216	216	216	216	714
Tool Kit: Urban Operations	T30195	$77,049	41	61	76	94	266
Tractor FT HS: Armored Combat Earthmover (ACE) *	W76473	$887,050	68	68	68	68	68
Transporter Common Bridge *	T91308	$302,274	494	494	494	494	504
Urban Operations: Platoon Kit	U88092	$175,445	18	26	34	43	195
Launch M60 Series Tank Chassis	L43664	$4,641,558	103	103	103	103	102
Loader Scoop Type: DSL 2-1/2 cu-yd Hinge Frame w/Multipurpose Bucket *	L76556	$141,500	4	4	4	4	27
Mine Resistant Vehicle	M74226	$540,000	0	0	0	0	268
Field Logistics							
Assault Kitchen *	A94943	$57,963	59	59	59	59	153
Container Assembly Refrigerated: w/9000 Btu Ref Unit *	C84541	$141,027	155	155	155	155	205
Containerized Kitchen (CK) *	C27633	$351,688	78	78	78	78	92
Electronic Shop Shelter-mtd Avionics: AN/ASM-146 *	H01907	$171,515	79	93	116	121	178
Force Provider Module: Houses 550 Soldiers Transportable	F28973	$11,614,850	0	0	0	0	6
Fuel System Supply Point: 800K *	F05034	$1,320,650	0	0	0	0	12
Fuel System Supply Point: Type 4 300K	F04966	$1,320,650	60	60	60	60	150
Hoseline Outfit Fuel Handling: 4-in Diameter Hose	K54707	$473,736	37	37	37	37	76

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Hydraulic System Test/Repair Unit (MX3)	H05002	$86,547	55	55	55	55	195
Laundry Advanced System (LADS): Trailer-mtd *	L70538	$1,022,444	80	80	80	80	108
Load Handling System: 2000-gal Water Tank-Rack (HIPPO) *	T32629	$151,958	50	80	110	110	475
Maintenance Support Device *	T92889	$14,376	3,333	3,540	3,786	3,935	4,283
Modular Fuel System-Tank Rack Module with Retail Capability	T20131	$127,167	0	30	36	36	46
Petroleum Quality Analysis System: Enhanced	P25743	$1,513,000	24	25	25	25	33
Rough Terrain Container Handler: Kalmar RT240 *	R16611	$868,103	278	278	278	278	346
Sanitation Center: Food *	S33399	$50,936	391	391	391	391	490
SATS Field Maintenance Module 2	T65562	$285,591	0	0	0	0	14
Shelter: Tactical Expandable Two side *	S01359	$223,222	64	64	64	64	125
Shop Equipment Auto Maint/Repair: OM Common No 1	W32593	$285,591	8	8	8	8	38
Shop Set Small Arms: Field Maintenance Basic Less Power	W51499	$345,000	32	32	32	32	63
Shower: Portable 12 Head	S62898	$1,200,000	89	89	89	89	140
Tank and Pump Unit Liquid Dispensing Truck mounting *	V12141	$96,549	732	732	732	732	867
Terminal Tactical Petroleum: Marine	T56041	$1,400,873	0	0	0	0	12
Tractor Wheeled Ind: DED 4X4 w/Forklift & Crane Att (HMMH)	T33786	$93,202	74	74	74	74	177
Trailer Tank Water: 400-gal 1.5 ton 2-wheel *	W98825	$85,825	1,009	1,009	1,009	1,009	1,331
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	$98,681	516	516	516	516	588
Truck Lift Fork: Variable Reach Rough Terrain *	T73347	$158,836	1,042	1,042	1,042	1,042	1,084
Truck Tractor Yard: 46000 GVW 4X2	T60353	$96,051	89	89	89	89	294
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd *	W47225	$455,871	28	28	28	28	66
Tactical Water Purification System (TWPS) 1500-gph *	T14017	$455,871	33	33	33	33	37
Force Protection							
Alarm Biological Agent Automatic: (BIDS) M31A2	A48680	$1,408,429	350	350	350	350	350
Alarm Chemical Agent Automatic: M22 *	A33020	$5,996	93	93	93	93	1,254
Chemical-Biological Protective Shelter (CBPS): M8 *	C07506	$1,635,636	2	2	2	2	4
Mask Chem-Bio Joint Service General Purpose: Field M50	M12986	$400	865	865	865	865	124,253
Nuclear Biological Chemical Recon Vehicle NBCRV *	N96543	$8,024,127	4	4	4	4	96
Radiac Set: AN/PDR-75A *	R30925	$6,462	1,594	1,594	1,594	1,594	2,486
General Engineering							
Compressor Unit: Trailer-mtd 250-cfm 100-psi	E72804	$180,850	266	266	266	266	406
Distributor Water Tank: 6000-gal Semitrailer-mtd CCE *	D28318	$668,953	53	53	53	53	85
Excavator: Hydraulic Type I Multipurpose Crawler Mount *	E27792	$354,259	63	74	81	81	109
Hydraulic Electric Pneumatic Petroleum Operated Equip (HEPPOE)	H05004	$180,850	64	77	89	98	147
Mixer Concrete Module: PLS 2600-gal	M81382	$127,160	29	29	29	29	36
Mixing Plant Asphalt: DSL/Electric Power 100 to150 ton	M57048	$3,753,750	4	4	4	4	5
Paving Machine: Bituminous Material	Z01356	$2,773,125	0	0	0	0	6
Scraper Elevating: SP 8-11 cu-yd Non-Sectionalized *	S29971	$714,285	0	0	0	0	14
Tool Kit Carpenters: Engineer Platoon w/Chest	W34511	$15,000	152	152	152	152	270
Tool Kit Electricians: Set No 1	W36977	$11,470	122	122	122	122	367
Tool Kit Mason & Concrete Finishers: Brick Stone & Concrete	W44923	$21,047	106	106	106	106	348
Tractor FT HS: Deployable LT Engineer (Deuce) *	T76541	$398,000	9	9	9	9	14
Tractor Full Tracked: Low Speed T5	T05029	$188,638	10	10	10	10	13

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Tractor Full Tracked: Low Speed T9	T05015	$316,096	87	98	98	98	121
Motorized Grader *	M05001	$277,000	125	125	125	125	157
Tractor Full Tracked: Low Speed T-5 Type II w/Ripper	T05026	$199,262	10	10	10	10	13
Maneuver Combat Systems							
Carrier Personnel Full Tracked: Armored (RISE)	C18234	$511,343	232	232	232	232	349
Maneuver Systems							
Drivers Enhancers: AN/VAS-5 *	D41659	$64,965	59	59	59	59	704
Medical Field Systems							
Computer Set: Digital AN/TYQ-106(V)1 *	C18345	$3,390	233	432	754	1,271	3,785
Dental Filmless Imaging System (DFIS)	D44302	$38,749	52	55	55	59	143
Medical Materiel Set X-Ray Radiographic	M86675	$203,223	0	0	0	0	16
Medical Materiel Set Central Materiel Service	M08417	$855,010	27	27	27	27	52
Medical Materiel Set Intermediate Care Ward	M08599	$203,649	28	28	28	28	174
Medical Materiel Set Post-Op/ICU Ward	M09576	$331,047	27	27	27	27	68
Medical Materiel Set X-Ray Radiographic Fluoroscopic	M72300	$281,240	0	0	0	0	18
Medical Materiel Set Operating Room	M72936	$497,155	24	24	24	24	52
Medical Materiel Set Triage/Emergency/Pre-Op	M73050	$440,645	27	27	27	27	34
Tent: Extendable Modular 64Lx20W Medical Forest Green Type II	T47745	$432,000	63	63	63	63	349
Solider Systems							
Armament Subsystem: Remotely Operated	A90594	$236,751	0	0	0	0	1,134
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-6	M74849	$43,128	38	38	38	38	871
Night Vision Goggle: PVS-7 *	N05482	$3,475	17,869	17,869	17,869	17,869	75,826
Soldier Weapons							
Launcher Grenade: M320 *	L03621	$4,876	25	1,023	1,384	1,384	3,615
Launcher Grenade: M320A1 *	L69080	$4,876	176	176	176	176	2,587
Machine Gun: 7.62mm M240L	M92454	$14,404	28	28	28	28	184
Machine Gun: Caliber .50 Heavy Fixed Turret Type	L91701	$15,259	275	275	275	275	450
Machine Gun: 7.62mm M240B	M92841	$14,404	5,456	5,456	5,456	5,456	7,223
Machine Gun: Caliber .50	M39331	$15,000	254	254	254	254	4,887
Rifle 5.56mm: M4 *	R97234	$2,076	24,890	24,890	24,890	24,890	51,825
Support Systems							
Command and Control System: AN/TSQ-284 (HCCC)	C05019	$8,807,000	6	6	6	6	4
Container Handling Unit	C27294	$42,249	616	638	638	638	1,901
Landing Craft Mechanized: Mod2	L36654	$1,700,000	1	1	1	1	1
Platform: Container Roll-In/Roll-Out *	B83002	$25,097	8,998	8,998	8,998	8,998	13,949
Trailers							
Semitrailer Flatbed: Breakbulk/Container Transporter 34-ton *	S70159	$70,787	1,603	1,603	1,603	1,603	1,949
Semitrailer Low Bed: 25-ton 4-wheel W/E *	S70517	$262,852	115	115	115	115	143
Semitrailer Low Bed: 40-ton 6-wheel W/E *	S70594	$216,925	643	643	643	643	853
Semitrailer Low Bed: 70-ton HET	S70859	$610,664	403	403	403	403	480
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload *	S10059	$146,093	1,027	1,027	1,027	1,027	1,080
Semitrailer Tank: Petroleum 7500-gal Bulk Haul	S73119	$198,020	400	400	400	400	480
Trailer Cargo: High Mobility 1-1/4 ton *	T95924	$9,615	2,165	2,165	2,165	2,165	2,312

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Trailer Cargo: MTV w/Dropsides M1095 *	T95555	$50,433	1,702	1,702	1,702	1,702	2,277
Trailer: Palletized Loading 8X20 *	T93761	$65,531	2,843	2,890	2,957	3,039	3,202
Trucks							
Armored Security Vehicle (ASV): Wheeled w/Mount *	A93374	$1,019,000	293	293	293	293	450
Tractor Line Haul: M915A5	T88858	$212,000	986	986	986	986	901
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	$397,000	240	240	240	240	382
Truck Cargo: 5-ton 6X6 TV W/E LAPES/AD *	T41036	$210,180	7	7	7	7	19
Truck Cargo: 5-ton wo/Winch *	T41515	$255,952	2,332	2,332	2,332	2,442	3,486
Truck Cargo: Heavy PLS Transporter 15-16.5 Ton 10X10 *	T40999	$1,075,209	1,064	1,064	1,064	1,064	1,060
Truck Cargo: M985A4	T59380	$342,365	34	39	39	39	120
Truck Cargo: MTV LWB W/E *	T61704	$255,952	13	13	13	13	130
Truck Cargo: wo/Winch *	T59448	$157,982	1,565	1,565	1,565	1,565	2,029
Truck Dump: 10-ton w/Winch *	T65274	$383,786	150	150	150	150	165
Truck Dump: 10-ton wo/Winch *	T65342	$242,585	399	399	399	399	663
Truck Dump: 20-ton DED 12 cu-yd Cap (CCE) *	X44403	$211,764	231	231	233	240	234
Truck Palletized (LHS): M1120A4 *	T55054	$367,575	736	736	736	736	1,251
Truck Tank: wo/Winch	T58318	$499,182	155	163	163	163	337
Truck Tractor: Light Equipment Transporter (LET) *	T60946	$319,009	665	665	665	665	949
Truck Tractor: Heavy Equipment Transporter (HET) *	T59048	$461,970	181	181	181	181	192
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	$212,000	1,221	1,221	1,221	1,221	1,560
Truck Tractor: wo/Winch *	T88983	$242,669	526	526	526	588	1,202
Truck Tractor: XM1070A1	T05012	$461,970	318	318	318	318	288
Truck Utility Expanded Capacity M1165A1 *	T56383	$153,760	1,518	1,518	1,518	1,518	3,246
Truck Utility Expanded Capacity M1152A1 *	T37588	$153,760	1,636	1,636	1,636	1,636	2,839
Truck Utility: Armored 1-1/4-ton W/W HMMWV *	T92310	$129,376	14	14	14	14	44
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	$153,760	1,347	1,347	1,347	1,347	5,838
Truck Utility: Cargo/Troop Carrier W/W HMMWV *	T61562	$153,760	6	6	6	6	42
Truck Utility: ECV Armament Carrier w/IAP Armor-ready M1151A1 *	T34704	$129,376	4,401	4,401	4,401	4,401	1,506
Truck Utility: Expanded Capacity, Up-armored HMMWV *	T92446	$129,376	132	132	132	132	3,129
Truck Utility: S250 Shelter Carrier HMMWV *	T07543	$153,760	2	2	2	2	45
Truck Van: LMTV W/E *	T93484	$232,284	73	73	73	73	139
Truck Van: M1079A1P2 wo/Winch	T62359	$232,284	216	216	216	216	59
Truck Wrecker: M984A4	T63161	$886,000	216	219	219	219	428
Truck Wrecker: MTV W/W *	T94709	$690,707	112	112	112	112	129
Truck Wrecker *	T94671	$690,707	87	87	87	92	107
Truck: Expandable Van wo/Winch	T67136	$372,440	255	255	255	266	292
Truck: Palletized Loading System (PLS)	T81874	$1,075,209	639	674	758	807	841
Truck Cargo: 2.5-ton LMTV LAPES/AD W/W	T42063	$203,039	1	1	1	1	9

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature[1]	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Watercraft							
Barge Deck or Liquid Cargo: Nonprop *	B31197	$335,580	2	2	2	2	3
Platform: Container Roll-In/Roll-Out *	B83002	$25,097	8,998	8,998	8,998	8,998	13,949
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	7	7	7	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 2015.

Nomenclature [1]	Equip No.	Average Age	Remarks
Aircraft			
Airplane Cargo Transport, C-12F *	A30062	18	
Airplane, Utility, UC-35B	A05015	13	
Helicopter Cargo Transport, CH-47D *	H30517	25	
Helicopter Utility, UH-60L *	H32361	21	
Helicopter, Medevac, HH-60L *	U84291	10	
Helicopter, Medevac, HH-60M *	M33458	5	
Utility Cargo Aircraft: UC-35A *	U05004	18	
Combat Mobility			
Boat Bridge Erection Inboard Engine: Shallow Draft *	B25476	25	
Armored Vehicle Launched Bridge (AVLB) Scissors: 63-ft MLC 70 *	B31098	27	
Detecting Set: Mine AN/PSS-14	D03932	9	
Interior Bay Bridge Floating *	K97376	24	
Launch M60 Series Tank Chassis	L43664	38	
Ramp Bay Bridge Floating *	R10527	27	
Tractor Full Tracked High Speed: Armored Combat Earthmover (ACE) *	W76473	23	
Transporter Common Bridge *	T91308	15	
Field Logistics			
Laundry Advanced System (LADS): Trailer-mtd *	L70538	13	
Tractor Wheeled: DED 4X4 w/Forklift and Crane Att (HMMH)	T33786	25	
Trailer Tank Water: 400-gal 1-1/2 ton *	W98825	32	
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	28	
Truck Tractor: Yd 46000 GVW 4X2	T60353	20	
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd *	W47225	24	
Force Protection			
Chemical-Biological Protective Shelter (CBPS): M8 *	C07506	13	
General Engineering			
Compressor Unit, Trailer-mtd 250-cfm 100-psi	E72804	31	
Distributor Water Tank: 6000-gal Semitrailer-mtd *	D28318	28	
Excavator: Hydraulic Type I Multipurpose Crawler *	E27792	20	
Mixing Plant Asphalt: Diesel (DSL) / Elec power 100 to 150 ton	M57048	19	
Tractor Full Tracked (FT) HS, Deployable LT Engineer (Deuce) *	T76541	15	
Maneuver Combat Vehicles			
Carrier Armored Command Post: Full Tracked	C11158	21	
Carrier Personnel Full Tracked: Armored (Rise)	C18234	32	
Trailers			
Semitrailer Flatbed: Breakbulk/Container 34-ton *	S70159	28	
Semitrailer Low Bed: 25-ton 4-wheel W/E *	S70517	47	

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Average Age of Equipment

Nomenclature[1]	Equip No.	Average Age	Remarks
Semitrailer Low Bed: 40-ton 6-wheel W/E *	S70594	26	
Semitrailer Low Bed: 70-ton HET	S70859	18	
Semitrailer Tank: 5000-gal Bulk Self-Load/Unload *	S10059	23	
Semitrailer Tank: Petroleum 7500-gal Bulk Haul	S73119	23	
Trucks			
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	26	
Truck Dump: 20 Ton DSL 12 cu yd Capacity (CCE) *	X44403	27	
Truck Tractor: Heavy Equipment Transporter (HET) *	T59048	19	
Truck Tractor: Line Haul C/S 50000 M915 *	T61103	21	
Truck Utility: Armt Carrier, Armored, W/W HMMWV *	T92310	25	
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	24	
Truck Utility: Cargo/Troop Carrier W/W HMMWV *	T61562	25	
Truck Utility: Expanded Capacity Up-armored HMMWV *	T92446	15	
Truck Utility: S250 Shelter Carrier HMMWV *	T07543	24	
Watercraft			
Barge Deck or Liquid Cargo: Nonprop *	B31197	60	
Crane Barge: 89 to 250-ton *	F36090	19	
Landing Craft Mechanized: 69-ft	L36739	22	
Landing Craft Utility: RORO 245 to 300 ft *	L36989	43	
Tug: Large Coastal and Inland Waterway Diesel *	T68398	21	
Tug: Small 900 Class	T68398	15	
Vessel Logistic Support: 245 to 300 ft *	V00426	27	
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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Modification of Aircraft			
Utility/Cargo Airplane Modifications		$8,388,000	$6,818,000
Network and Mission Plan	$4,512,000	4,095,000	5,504,000
Comms, Nav Surveillance	4,145,000	5,032,000	5,506,000
Global Air Traffic Management (GATM) Rollup	1,694,000	2,825,000	3,059,000
Support Equipment and Facilities			
Common Ground Equipment	3,268,000	3,211,000	3,551,000
Modification of Missiles			
Improved Target Acquisition System (ITAS) / TOW Modifications	514,000		
Weapons and Tracked Combat Vehicles (WTCV)			
Joint Assault Bridge			44,967,000
XM320 Grenade Launcher Module (GLM)	3,299,000		
Carbine	5,861,000	2,156,000	4,420,000
Handgun		2,555,000	2,672,000
M4 Carbine Modifications	1,215,000	1,248,000	1,265,000
M2 .50 cal Machine Gun Modifications	11,660,000	15,680,000	10,000,000
Tactical and Support Vehicles			
Tactical Trailers/Dolly Sets	2,237,000	3,175,000	3,243,000
Truck, Dump, 20-ton (CCE)		4,813,000	7,726,000
Family of Medium Tactical Vehicles (FMTV)	31,016,000	77,125,000	37,966,000
Family of Heavy Tactical Vehicles (FHTV)		6,271,000	370,000
Palletized Load System (PLS) Extended Service Program (ESP)	39,423,000	3,371,000	
Modification of In-service Equipment	49,822,000	19,777,000	11,466,000
Communications and Electronics Equipment			
Warfighter Information Network-Tactical (WIN-T) - Ground Forces Tactical Network	3,180,000	2,044,000	
Signal Modernization Program			9,505,000
SMART-T (Space)	2,250,000	2,000,000	
Global Broadcast Service (GBS)	1,000,000		
Army Materiel Command (AMC) Critical Items - OPA-2	5,869,000	5,128,000	510,000
Family of Medical Communications for Combat Casualty Care	11,868,000	12,522,000	16,108,000
Army Civil Affairs (CA)/Military Information Support Operations (MISO) GPF Equipment	3,695,000	6,072,000	5,405,000
Communications Security (COMSEC)	590,000	2,031,000	1,369,000
Distributed Common Ground System - Army (DCGS-A) (MIP)	4,655,000	4,665,000	4,665,000
Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) (MIP)	438,000	589,000	438,000
Night Vision Devices	966,000	951,000	
Joint Battle Command - Platform (JBC-P)	11,984,000	12,340,000	11,670,000
Air & Missile Defense Planning and Control System (AMDPCS)	8,896,000		

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2016	FY 2017	FY 2018
Network Management Initialization and Service	1,313,000	1,293,000	1,149,000
Maneuver Control System (MCS)	29,999,000	41,593,000	7,296,000
Global Combat Support System - Army (GCSS-A)	43,103,000	41,164,000	7,880,000
Reconnaissance and Surveying Instrument Set	6,048,000	103,000	778,000
Reserve Component Automation System (RCAS)	5,964,000	8,597,000	8,762,000
Tactical Digital Media			700,000
Items less than $5M (Surveying Equipment)	896,000	815,000	1,000,000
Other Support Equipment			
Protective Systems		287,000	263,000
Family of Non-Lethal Equipment (FNLE)			1,438,000
CBRN Defense		1,285,000	13,350,000
Tactical Bridge - Float Ribbon		19,608,000	26,712,000
Ground Standoff Minefield Detection System (GSTAMIDS)	10,650,000	6,218,000	3,942,000
Husky Mounted Detection System (HMDS)	3,391,000	6,405,000	17,558,000
Robotic Combat Support System (RCSS)	2,136,000		4,385,000
Robotics and Applique Systems			1,692,000
Remote Demolition Systems	1,492,000		
Items Less Than $5M (Countermine Equipment)	1,800,000	514,000	780,000
Family of Boats and Motors	858,000	93,000	185,000
Heaters and Environmental Control Units (ECUs)	2,366,000	2,784,000	1,673,000
Family of Engineer Combat and Construction Sets	6,796,000	5,833,000	5,515,000
Quality Surveillance Equipment	1,353,000		
Distribution Systems, Petroleum & Water	4,500,000	973,000	1,332,000
Combat Support Medical	5,147,000	14,185,000	10,856,000
Mobile Maintenance Equipment Systems	2,265,000	2,305,000	2,318,000
Items Less Than $5M (Maintenance Equipment)	13,000	13,000	13,000
Tractor, Full Tracked	12,156,000		
All Terrain Cranes	3,204,000	3,147,000	2,825,000
Plant, Asphalt Mixing	984,000		
Enhanced Rapid Airfield Construction Capability	638,000		
Construction Equipment ESP	5,185,000	7,765,000	7,794,000
Items Less Than $5M (Construction Equipment)	1,729,000	4,032,000	3,783,000
Army Watercraft ESP	19,886,000	16,107,000	
Generators and Associated Equipment	27,586,000	26,959,000	27,618,000
Family of Forklifts	4,828,000	5,500,000	6,700,000
Training Devices, Nonsystem	26,326,000	10,578,000	16,884,000
Close Combat Tactical Trainer			58,000
Aviation Combined Arms Tactical Trainer	5,262,000	4,963,000	4,875,000
Gaming Technology in Support of Army Training	3,264,000	3,531,000	4,155,000
Integrated Family of Test Equipment (IFTE)	4,294,000	2,651,000	1,158,000
Test Equipment Modernization (TEMOD)	1,005,000	1,898,000	1,550,000
Modification of In-service Equipment (OPA-3)	495,000	493,000	2,716,000
Total	**$460,989,000**	**$449,756,000**	**$397,896,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment			
Command and Control Equipment			
Engineer Command and Control (ENFIRE)	$2,900,000		
Construction and Engineering Equipment			
AN/PSS-14 Revision 6, Handheld Mine Detection System	6,300,000		
Heavy Scraper	5,803,340		
Family of Boat Motors (7 & 15 Man)	800,000		
Concrete Mixer	500,000		
Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE)	450,000		
Global Positioning System - Survey	350,000		
Field Logistics Systems			
Rough Terrain Cargo Handler	16,304,000		
Generators	14,627,040		
Truck Lift Fork, 5000lb Rough Terrain	4,500,000		
Food Sanitation Centers	1,800,000		
Transportation			
Transportation Costs	376,292		
Medical Systems			
Medical Materiel Set (MMS) X-Ray Radiological	6,500,000		
Sterile Surgical Dressing	800,000		
Coagulation Timer Unit	20,000		
Simulators			
Common Driver	700,000		
Tactical Wheeled Vehicles			
Truck Palletized Load System (PLS), M1075A1	98,787,507		
Truck Wrecker, M984A4	29,169,865		
Truck Medium Tactical Vehicles (MTV)	21,703,074		
High Mobility Multipurpose Wheeled Vehicle (HMMWV) Ambulances	15,000,000		
Truck Heavy Expanded Mobility Tactical Truck (HEMTT), M1120A4	853,173		
Engineer Change Proposal (ECP)	255,709		
Force Protection			
Chemical Biological Protective Shelters	8,500,000		
Radiac Set, Dosimeter, AN/PDR-75A	3,000,000		
FY 2014 NGREA Equipment			
Aviation			
Test Set Aircraft Fuel Quantity Gage		$60,000	
Tool Kit Tube Swaging, Set B		80,000	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
Tool Kit Electrical Repairer, Aircraft		40,000	
Survival Kit Aircraft, Basic 4-person		60,000	
Command and Control Systems			
Engineer C2 (ENFIRE)		2,800,000	
Command and Control (C2) Rapid Deployable Vehicle		350,000	
Engineer			
Hydraulic System Test and Repair Unit		2,000,000	
Mixer, Concrete		875,000	
AN/PSS-14 Revision 6, Handheld Mine Detection System		9,800,000	
Bridge Erection Boat		1,600,000	
Remote Frequency-Remote Activated Munitions		7,000,000	
Special Operations Forces Demo Kit - M303		3,375,000	
Global Positioning System - Survey		340,000	
Urban Ops Platoon Support Equipment		6,460,000	
Urban Ops Squad Support Equipment		3,710,000	
Family of Boat Motors (7 & 15 Man)		5,600,000	
Field Logistics			
Modular Fuel System-Tank Rack		450,000	
Petroleum Quality Analysis System		1,360,000	
RT240 Rough Terrain Cargo Handler (RTCH)		4,500,000	
Truck Lift Fork, 5000lb Rough Terrain		7,500,000	
Food Sanitation Center		4,320,000	
Cabinet Solution Warming		40,000	
Coagulation Timer Unit: Plasma Semiautomatic Testing		20,000	
MMS X-Ray Radiographic		6,500,000	
Surgical Equipment Sterilization System		800,000	
Tactical Wheeled Vehicles			
HMMWV Ambulance		18,000,000	
Palletized Loading System		20,800,000	
HEMTT Cargo		15,600,000	
HEMTT Load Handling System (LHS)		15,360,000	
Truck, CST Response (4x4)		975,000	
Tactical Operations Center (TOC) Trailer, Tandem Axle		175,000	
Cargo Trailer, Tandem Axle (15' 2")		100,000	
Utility Trailer, Tandem Axle		50,000	
Medical Response Vehicle		100,000	
Force Protection			
Chemical, Biological, Radiological, and Nuclear (CBRN) Small Unmanned Ground Vehicle		200,000	
Radiac Set: AN/PDR-75A		18,000,000	
Simulators			
Engagement Skills Trainer 3000		1,500,000	

Table 4

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
Multiple Amputee Trauma Trainer (MATT)		500,000	
Construction Equipment Virtual Trainer (CEVT)		6,000,000	
Transportation Common Driver		4,800,000	
Rough Terrain Cargo Handler (RTCH)		1,100,000	
ATLAS II Forklift		1,100,000	
Engineer Change Proposal (ECP) Reserve		500,000	
Transportation Reserve		500,000	
Total	**$240,000,000**	**$175,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 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	Equip No.	FY 2016 Qty	FY 2017 Qty	FY 2018[1] Qty	Remarks
Aircraft					
CH-47F Improved Cargo Helicopter	C15172	+18			
Small Unmanned Aircraft System: Raven B	S83835	+1			
Aviation					
Warning Receiver System Countermeasure	W55180	+7			
Battle Command (Command & Control)					
BTUH 60000 Enviromental Control Unit: HD-1240/G	B29108	+242			
Computer Set, Digital: AN/UYK-128	C18378	+1,123			
Computer System: Digital AN/UYQ-90(V)3	C78851	+74			
Generator Set: DED 15kW 50/60Hz: Skid-mtd	G49966		+9		
LTT Trailer-mtd: PU-2002 10kW 50/60Hz	L84622	+5			
Panel Power Distr: 60Hz 400-amp	P60558	+40			
Trailer-mtd: PU-2101 15kW 50/60Hz M200A1	T40090	+24			
Army Human Resources Workstation (AHRW)	Z39781	+28			
Battlespace Awareness					
Digital Topographic System: AN/TYQ-67(V)	D10281	+4			
Detecting System Countermeasures: AN/MLQ-40(V)4	D04182		+4		
Data Analysis Central: AN/MSW-24	D77801	+2			
Battle Command Transport Networks					
Battalion Command Post Switching Group	B67234	+3			
Radio Set: AN/VRC-89F(C)	R44999	+98	+124		
Radio Set: AN/VRC-92F(C)	R45543	+649	+16		
Radio Set	R55336	+65	+73		
Radio Set: AN/PSC-5	R57606	+132	+42		
Radio Set: AN/VRC-88F(C)	R67330	+11			
Radio Set: AN/VRC-90F(C)	R68044	+2,579	+724		
Radio Set: AN/VRC-91F(C)	R68146	+124	+41		
Radio Set: AN/PRC-119F(C)	R83141	+1			
Satellite Communication System: AN/TSC-156	S23268	+1			
Satellite Communication Terminal: AN/TSC-154	T81733	+2	+1		
Radio Set: Hand-held Radio	Z01320	+1,741			
Combat Mobility					
Detecting Set: Mine AN/PSS-14	D03932	+112	+21		
Loader Skid Steer: Type III	L77215	+15	+17		
Mine Resistant Vehicle	M74226	+12			
Field Logistics					
Fuel System Supply Point: FSSP Type 4 300K	F04966	+2			

USAR
Projected Equipment Transfer/Withdrawal Quantities

Nomenclature	Equip No.	FY 2016 Qty	FY 2017 Qty	FY 2018[1] Qty	Remarks
Electronic Shop Shelter-mtd Avionics: AN/ASM-146	H01907	+59	+8		
Hydraulic System Test and Repair Unit (MX3)	H05002	+23			
Hoseline Outfit Fuel Handling: 4-in Diameter Hose	K54707	+14			
Laundry Advanced System (LADS): Trailer-mtd	L70538	+7			
Rough Terrain Container Handler (RTCH): Kalmar RT240	R16611	+28			
Food Sanitation Center	S33399	+36	+9		
Load Handling System (LHS) Compatible, 2000-gal Water Tank Rack (HIPPO)	T32629	+8			
Truck Tractor: Yard 46000 GVW 4X2	T60353	+10			
Truck Lift: Fork Variable Reach Rough Terrain	T73347	+64	+2		
Water Purification: Reverse Osmosis 3000-gph Trailer-mtd	W47225	+8			
Trailer Tank: Water 400-gal 1.5-ton 2-wheel W/E	W98825	+1	+8		
Force Protection					
Mask Chemical-Biological Joint Service General Purpose: Field M50	M12986	+129			
NBC Reconnaissance Vehicle (NBCRV)	N96543	+31			
Radiac Set: AN/PDR-75A	R30925	+226	+23		
General Engineering					
Comp Unit Rty: Air Trailer-mtd DED 250-cfm 100-psi	E72804	+2			
Motorized Grader	M05001		+9		
Mixer Concrete Module: PLS 2600-gal	M81382	+2			
Scraper Elevating: Self-propelled 8-11 cu yd Non-Sectionalized	S29971	+1			
Tractor FT High-speed: Deployable Lt Engineer (DEUCE)	T76541	+3			
Maneuver Systems					
Drivers Enhancers: AN/VAS-5	D41659	+651			
Medical Field Systems					
Computer Set: Digital AN/TYQ-106(V)1	C18345	+222	+2		
Soldier Systems					
Night Vision Goggle	N05482	+7,445	+400		
Soldier Weapons					
Launcher Grenade: M320A1	L69080	+1,757			
Support Systems					
Platform: Container Roll-in/Roll-out	B83002	+2,801			
Trailers					
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload W/E	S10059	+3	+2		
Semitrailer Low Bed: 25-ton 4-wheel W/E	S70517		+1		
Semitrailer Low Bed: 70-ton Heavy Equipment Transporter (HET)	S70859		+18		
Semitrailer Tank: Petroleum 7500-gal Bulk Haul	S73119	+33	+19		
Trailer: Palletized Loading 8X20	T93761	+59			
Trailer Cargo: MTV W/Dropsides M1095	T95555	+135	+48		
Trailer Cargo: High Mobility 1-1/4 ton	T95924	+108			

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Projected Equipment Transfer/Withdrawal Quantities

Nomenclature	Equip No.	FY 2016 Qty	FY 2017 Qty	FY 2018[1] Qty	Remarks
Trucks					
Armored Security Vehicle: Wheeled w/Mount	A93374	+30			
Truck Utility: ECV Armament Carrier w/IAP Armor-ready M1151A1	T34704	+168	+125		
Truck Utility Expanded Capacity Enhanced: M1152A1	T37588	+52	+75		
Truck Cargo: 5-ton WO/Winch	T41515	+274	+1		
Truck Cargo: 2.5-ton 4X4 LMTV W/E W/W LAPES/AD	T42063	+8			
Truck Palletized (LHS): M1120A4	T55054	+317	+17		
Truck Utility Expanded Capacity Enhanced 4X4: M1165A1	T56383	+159	+4		
Truck Tank: WO/Winch	T58318	+17	+3		
Truck Cargo: M985A4	T59380	+20			
Truck Cargo: WO/Winch	T59448	+251	+33		
Truck Utility: Cargo/Troop Carrier 1-1/4 ton 4X4 W/E (HMMWV)	T61494	+108			
Truck Cargo: MTV LWB W/E	T61704		+2		
Truck Wrecker: M984A4	T63161	+72			
Truck Dump: 10-ton WO/Winch	T65342		+22		
Truck: Palletized Loading	T81874	+23			
Truck Tractor: WO/Winch	T88983	+4			
Truck Wrecker: MTV W/E W/W	T94709	+10			

1. The Army continues to analyze the effects of end strength reductions and restructuring associated with sequestration. Therefore Table 5 data for the projected equipment transfer and withdrawal estimates associated with FY 2018 are pending senior Army leader decisions.

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FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
Battle Command and Control							
Generator Set, 5kW, MEP-802A TQG	G11966	+35	+248				
Generator Set, 15kW, PU-802 TQG	G53778	+9	+66				
Force Protection							
Radiac Set, AN/PDR-75	R30925	+1	+199				
Mask, Chemical Biological, M40	M12418	+21	+3,265				
Radiac Set, AN/UDR-13	R31061	+3	+82				
Soldier Systems							
Night-vision Sight, AN/PVS-4 w/Img	N04732	+547	-792				
Night-vision Goggles, AN/PVS-7B	N05482	+9,292	-56				
Laser IR Observation Set (MELIOS), AN/PVS-6	M74849	+43	+0				
Soldier Weapons							
Rifle, 5.56mm, M16A2	R95035	+705	+3,868				
Command Launch Unit, Javelin	C60750	+3	+34				
Machine Gun, 7.62mm, M240B	M92841	+395	+97				
Carbine, 5.56mm, M4	R97234	+185	+74				
Machine Gun, Grenade, 40mm, MK19 MOD III	M92362	+6	+140				
Machine Gun, 5.56mm, M249	M09009	+16	-104				
Trailers							
Semitrailer Tanker, 5000-gal POL, M969	S73372	+2	+14				
Trailer, HEMAT, 11-ton, M989A1	T45465	+44	+21				
Trucks							
HEMTT Fuel Tanker, 2500gal, M978 W/W	T58161	+3	-3				
LMTV 2.5-ton Cargo Truck, M1078	T60081	+1	+20				
MTV 5-ton Cargo Truck, M1083	T61908	+5	+23				
FY 2012 P-1R Equipment							
Modification of Aircraft							
C-12 Cargo Airplane				$10,500,000	$0		
MQ-1 Payload - Unmanned Aircraft System				6,000,000	0		
Global Air Traffic Management (GATM) Rollup				2,884,000	8,100,000		
Utility/Cargo Airplane Modifications				0	1,900,000		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Tracked Combat Vehicles							
Stryker Vehicle				15,576,000	169,900,000		
Weapons and Other Combat Vehicles							
Machine Gun, .50 cal M2 Roll				10,180,000	0		
XM320 Grenade Launcher Module (GLM)				965,000	1,000,000		
M4 Carbine				4,435,000	0		
M16 Rifle Modifications				100,000	100,000		
Tactical Vehicles							
Semitrailers, Flatbed				3,000,000	0		
Family of Medium Tactical Vehicles (FMTV)				16,341,000	18,100,000		
Family of Heavy Tactical Vehicles (FHTV)				271,489,000	234,900,000		
Palletized Load System (PLS) Extended Service Program (ESP)				67,316,000	67,300,000		
Mine Protection Vehicle Family				35,094,000	31,600,000		
Heavy Expanded Mobile Tactical Truck (HEMTT) ESP				34,179,000	34,100,000		
Communications and Electronics Equipment							
Warfighter Information Network - Tactical (WIN-T) - Ground Forces Tactical Network				0	14,300,000		
Defense Enterprise Wideband SATCOM Systems				900,000	900,000		
NAVSTAR Global Positioning System (Space)				1,658,000	0		
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) (Space)				411,000	0		
Army Global Command & Control System (AGCCS)				1,092,000	1,092,000		
Spider Anti-personnel Landmine Alternative (APLA) Remote Control Unit				1,593,000	1,600,000		
Medical Communications for Combat Casualty Care (MC4)				4,091,000	4,100,000		
Reserve Civil Affairs (CA) / Military Information Support Operations (MISO) GPF Equipment				28,266,000	28,300,000		
Telecommunications Security (TSEC) - Army Key Management System (AKMS)				913,000	0		
Distributed Common Ground System - Army (DCGS-A) (MIP)				35,000	0		
Night Vision Devices				1,868,000	3,800,000		
Night Vision, Thermal Weapon Sight				6,550,000	6,600,000		
Green Laser Interdiction System				1,987,000	2,000,000		
Fire Support Command and Control (C2) Family				335,000	300,000		
Battle Command Sustainment Support System (BCS3)				7,800,000	7,900,000		
Maneuver Control System (MCS)				17,588,000	20,600,000		
Single Army Logistics Enterprise (SALE)				4,704,000	3,600,000		
Reconnaissance and Surveying Instrument Set				4,757,000	4,800,000		
Combat Service Support (CSS) Communications				4,490,000	0		
Items Less Than $5M (Surveying Equipment)				1,463,000	860,000		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Other Support Equipment							
Protective Systems				0	1,100,000		
Family of Non-lethal Equipment (FNLE)				7,866,000	1,200,000		
Base Defense Systems (BDS)				4,002,000	4,000,000		
Smoke & Obscurant Family (SOF)				362,000	400,000		
Tactical Bridging				32,468,000	14,200,000		
Tactical Bridge, Float-Ribbon				18,296,000	0		
Handheld Standoff Mine Detection System (HSTAMIDS)				10,403,000	0		
Heaters and Environmental Control Units (ECUs)				3,150,000	3,600,000		
Field Feeding Equipment				1,121,000	2,900,000		
Cargo Aerial Delivery & Personnel Parachute System				3,033,000	3,400,000		
Mobile Integrated Remains Collection System				7,384,000	7,400,000		
Items Less Than $5M (Engineer Support)				3,131,000	3,131,000		
Distribution Systems, Petroleum & Water				12,760,000	12,800,000		
Combat Support Medical				23,671,000	11,000,000		
Mobile Maintenance Equipment Systems				6,427,000	6,400,000		
Tractor, Full Tracked				14,751,000	13,100,000		
High Mobility Engineer Excavator (HMEE) Family of Systems (FOS)				790,000	5,000,000		
Generators and Associated Equipment				26,764,000	42,700,000		
Family of Forklifts				1,884,000	2,000,000		
All Terrain Lifting Army System (ATLAS)				8,189,000	8,300,000		
Integrated Family of Test Equipment (IFTE)				3,019,000	5,000,000		
Test Equipment Modernization (TEMOD)				1,987,000	1,500,000		
Modification of In-service Equipment (OPA3)				4,525,000	0		
FY 2012 NGREA Equipment							
Field Logistics						$75,000,000	$56,252,329
General Engineering						52,000,000	68,826,449
Heavy Tactical Vehicles						5,000,000	0
Force Protection						5,000,000	0
Simulators						5,000,000	6,895,452
Family of Medium Tactical Vehicles (FMTV)						3,000,000	13,025,770
Total				**$764,543,000**	**$816,883,000**	**$145,000,000**	**$145,000,000**

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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 2016 Qty	Deployable?	
					Yes	No
Aircraft						
Helicopter Utility: UH-60A *	K32293	Helicopter Utility: UH-60L *	H32361	16	X	
Utility Cargo Aircraft: UC-35A *	U05004	Airplane, Utility: UC-35B	A05015	5	X	
Battle Command (Command & Control)						
Trailer-mtd: PU-2102 30kW 50/60Hz M200A1	T39954	Generator Set Diesel TM: PU-803 *	G35851	44	X	
Battle Command Transport Networks						
Computer System: Digital AN/PSQ-17 *	C18380	Computer Digital Mission Planner: AN/PYQ-19	C05003	2	X	
Radio Set: AN/PRC-119F(C) *	R83141	Radio Set: AN/VRC-88F(C) *	R67330	66	X	
Radio Set: AN/PSC-5 *	R57606	MBMMR: AN/PSC-5D	M27420	336	X	
		Radio Set: AN/PRC-117F(V)2(C)	R87207	18	X	
		Radio Set: Tactical Satellite Radio Vehicular System	R29704	94	X	
Radio Set: AN/VRC-89F(C) *	R44999	Radio Set: AN/VRC-91F(C) *	R68146	98	X	
Teleconference System: AN/TYQ-122 *	T43146	Video Teleconference System: AN/TYQ 122A	P05024	10	X	
Battle Space Awareness						
Digital Topographic System: AN/TYQ-67(V) *	D10281	Workstation, Geospatial Intelligence: AN/TYQ-71(V)	D11498	1	X	
Combat Mobility						
Loader Scoop Type: DSL 2.5 cu-yd Hinge Frame w/Multipurpose Bucket *	L76556	Loader Scoop Type: 2.5 cu-yd	L76897	23	X	
Field Logistics						
Container Assembly Refrigerated: w/9000 Btu Ref Unit *	C84541	Multi-Temperature Refrigerate Container System (MTRCS)	M30688	56	X	
Shop Equipment Auto Maint/Repair: OM Common No 1	W32593	Forward: Repair System (FRS) *	F64544	1	X	
		Shop Equipment: Automotive Vehicle *	S25885	35	X	
Truck Lift Fork: DED 4000-lb Capacity Rough Terrain *	T49255	Tractor Wheeled Ind: DED 4X4 w/Forklift & Crane Att (HMMH)	T33786	1	X	
Force Protection						
Alarm Chemical Agent Automatic: M22 *	A33020	Joint Chemical Agent: Detector *	J00697	1,227	X	
General Engineering						
Excavator: Hydraulic Type I Multipurpose Crawler Mount *	E27792	Excavator: Hydraulic (Hyex) Type III Multipurpose Crawler Mount *	E27860	2	X	
Paving Machine: Bituminous Material	Z01356	Paving Machine Bituminous Material: DED Crawler-mtd 12-ft	N75124	2	X	
Scraper Elevating: SP 8-11 cu-yd Non-Sectionalized *	S29971	Scraper Elevating: SP 9-11 cu-yd Sectionalized *	S30039	9	X	
Maneuver Combat Systems						
Carrier Personnel Full Tracked: Armored (RISE)	C18234	Carrier Command Post: Light Tracked	D11538	3	X	
		Launcher Mine Clearing Line Charge Trailer Mounting: (MICLIC)	L67342	3	X	
Soldier Weapons						
Machine Gun: 7.62mm M240L	M92454	Machine Gun: 7.62mm M240B	M92841	104	X	

Major Item of Equipment Substitution List

Required Item Nomenclature[1]	Reqd Item Equip No.	Substitute Item Nomenclature[1]	Substitute Item Equip No.	FY 2016 Qty	Deployable?	
					Yes	No
Solider Systems						
Mini Eyesafe Laser IR Observation Set (MELIOS): AN/PVS-6	M74849	Target Locator Module	T27471	604	X	
Night Vision Goggle: PVS-7 *	N05482	Monocular NVD: AN/PVS-14 *	M79678	57,791	X	
Support Systems						
Container Handling Unit	C27294	Container Handling Unit (CHU) *	C84862	19	X	
Platform: Container Roll-In/Roll-Out *	B83002	Flatrack: Palletized Loading	F12581	1,109	X	
Trailers						
Semitrailer Low Bed: 40-ton 6-wheel *	S70594	Semitrailer Low Bed: 25-ton 4-wheel *	S70517	17	X	
Semitrailer Tank: 5000-gal Bulk Haul Self-Load/Unload *	S10059	Semitrailer Tank: 5K-gal Fuel Dispensing Automotive W/E *	S73372	57	X	
Semitrailer Tank: Petroleum 7500-gal Bulk Haul	S73119	Semitrailer Tank: 5K-gal Fuel Dispensing Automotive W/E *	S73372	9	X	
Trailer Cargo: High Mobility 1-1/4 ton *	T95924	Light Tactical Trailer: 3/4 ton *	T95992	398	X	
Trucks						
Truck Ambulance: 4-Litter Armored HMMWV *	T38844	Chemical-Biological Protective Shelter (CBPS): M8 *	C07506	2	X	
		Truck Ambulance: 2-Litter Armored HMMWV *	T38707	4	X	
Truck Cargo: 5-ton 6X6 TV W/E LAPES/AD *	T41036	Truck Cargo: 2.5-ton 4X4 LMTV W/E LAPES/AD *	T41995	2	X	
Truck Cargo: 5-ton wo/Winch *	T41515	Truck Cargo: 5-ton w/Winch *	T41447	11	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	529	X	
Truck Cargo: M985A4	T59380	Truck Cargo: Tactical 8X8 HEMTT w/Med Crane *	T39586	60	X	
		Truck Cargo: HEMTT W/W Med Crane *	T39654	26	X	
Truck Cargo: MTV LWB W/E *	T61704	Truck Cargo: LWB wo/Winch *	T93271	128	X	
		Truck Cargo: MTV W/E *	T61908	11	X	
Truck Palletized (LHS): M1120A4 *	T55054	Truck Cargo: HEMTT w/LHS *	T96496	36	X	
Truck Tank: wo/Winch	T58318	Truck Tank: Fuel Servicing 2500-gal HEMTT w/Winch *	T58161	28	X	
		Truck Tank: Fuel Servicing 2500-gal HEMTT *	T87243	43	X	
Truck Tractor: Heavy Equipment Transporter (HET) *	T59048	Truck Tractor: XM1070A1	T05012	307	X	
Truck Tractor: Line Haul C/S 50K M915 *	T61103	Tractor Line Haul: M915A5	T88858	387	X	
Truck Utility: Armored W/W HMMWV *	T92310	Truck Utility: Armt Carrier Armored HMMWV *	T92242	35	X	
		Truck Utility: ECV Armament Carrier w/IAP Armor-ready HMMWV M1151A1 *	T34704	8	X	
Truck Utility: Cargo/Troop Carrier HMMWV *	T61494	Truck Utility Expanded Capacity HMMWV M1165A1 *	T56383	418	X	
		Truck Utility Expanded Capacity HMMWV M1152A1 *	T37588	460	X	
		Truck Utility: Expanded Capacity Enhanced M1165 HMMWV	T38873	8	X	
		Truck Utility: Heavy Variant 10K GVW HMMWV *	T07679	3,966	X	

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Major Item of Equipment Substitution List

Required Item Nomenclature[1]	Reqd Item Equip No.	Substitute Item Nomenclature[1]	Substitute Item Equip No.	FY 2016 Qty	Deployable?	
					Yes	No
		Truck Utility: Expanded Capacity Enhanced M1152 HMMWV	T11588	47	X	
Truck Utility: Cargo/Troop Carrier W/W HMMWV *	T61562	Truck Utility Expanded Capacity M1152A1 HMMWV *	T37588	8	X	
		Truck Utility: Heavy Variant 10K GVW HMMWV *	T07679	38	X	
Truck Utility: Expanded Capacity, Up-armored HMMWV *	T92446	Truck Utility: ECV Armament Carrier w/IAP Armor-ready M1151A1 *	T34704	2,890	X	
Truck Utility: S250 Shelter Carrier HMMWV *	T07543	Truck Utility Expanded Capacity HMMWV M1152A1 *	T37588	13	X	
		Truck Utility: Expanded Capacity M1113 HMMWV *	T61630	6	X	
		Truck Utility: Heavy Variant 10K GVW HMMWV *	T07679	26	X	
Truck Van: LMTV W/E *	T93484	Truck Van: M1079A1P2 wo/Winch	T62359	95	X	
Truck Wrecker: M984A4	T63161	Truck Wrecker: HEMTT w/Winch *	T63093	79	X	
Truck Wrecker: MTV W/W *	T94709	Truck Wrecker: HEMTT w/Winch *	T63093	13	X	
		Truck Wrecker *	T94671	58	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	HMMWV - Armor Capable (1114, 1151, 1165 Models)	5,968	4,200	$136,400	$573,000,000	The high mobility multipurpose wheeled vehicle (HMMWV) recapitalization program terminated in FY 2010. Multiple variants create a model mix problem. Army Reserve is projected to begin fielding the next generation Joint Light Tactical Vehicle in FY 2022.
2	HMMWV Ambulance (M997A3)	382	382	$327,200	$125,000,000	No modern replacement has been identified for the HMMWV ambulance. Army Reserve has 233 legacy systems on-hand that average 25 years of age. A most modern A3 model is available through a Rock Island Army depot modernization program.
3	Liquid Logistics - Petroleum	351	182	$101,000	$18,382,000	The Army Reserve provides over 90 percent of the bulk petroleum storage and distribution capability for the Army. The 7,500 gallon tanker semitrailer fleet exceeds its economic useful life with no replacement platform or modernization program.
4	Heavy Tactical Vehicles	5,678	1,647	$420,700	$693,000,000	Army Reserve owns 43 percent of the overall transportation capability for the Army. Modernization programs to fill shortages, extend service life, and upgrade to armor models begin in FY 2015. Modernization of the heavy expanded mobile tactical truck (HEMTT) fleet, particularly the fuel tanker model is a priority.
5	Joint Assault Bridge	102	102	$5,000,000	$510,000,000	Replaces the Armor Vehicle Launch Bridge that averages 38 years old. Only 2 of 19 Mobility Augmentation Companies are projected to begin fielding by FY 2018.
6	Aircraft - Rotary Wing	137	96	$17,700,000	$1,700,000,000	The Army Reserve rotary-wing fleet consists of aeromedical evacuation, lift, and cargo capabilities. The priority is filling shortages of UH-60L Blackhawk helicopters associated with conversion of two battalions from attack to assault airframes.
7	Medium Mine Protected Vehicle (RG-31)	264	264	$550,000	$145,000,000	Mission essential vehicle for Route Clearance Companies and Area Clearance Platoons. Army Reserve owns 56 percent of the clearance capability at Echelons Above Brigade. Fielding of reset vehicles is projected to begin in FY 2017.
8	Float Bridging (Common Bridge Transport & Bridge Erection Boat)	630	630	$500,000	$315,000,000	A modernization program for the Common Bridge Transport begins in FY 2015 and a replacement platform for the Bridge Erection Boat begins procurement in FY 2017. Only two of nine Army Reserve Multi-Role Bridge Companies are projected to field modern systems by FY 2020.
9	Light Capability Rough Terrain Forklift (5K)	899	889	$75,000	$66,700,000	The Army Reserve provides over 50 percent of the logistics footprint for the Army. The 5K replaces the legacy 4K forklift, providing upgraded materiel handling capability across an array of mission sets.
10	All Terrain Heavy Crane (50-ton)	49	49	$1,100,000	$53,900,000	Modern replacement for the 25-ton crane. Provides heavy lift capability for multi-role bridge and vertical construction companies.

IV. Army Equipping Assessment

A. Equipping Background and Process

Army equipping begins with an understanding of Equipment On-hand (EOH). The Army process for developing EOH is driven by the building of the Army Command Plan, which establishes how much equipment (requirement) is needed in Army formations. The Army develops the Command Plan using directives from Army senior leadership, Office of the Secretary of Defense, and Congressional guidance. The Command Plan identifies and documents future requirements based upon projected allocations of equipment, down to the unit level – two years out.

Requirements are documented on unit authorization documents. These documents have an equipment list unique to the type of unit. The equipment is cataloged by Line Item Number (LIN). LINs represent a capability required in the unit to perform a function in support of the unit's mission. As new equipment becomes available, the unit authorization documents are updated. This is done through a change process that is documented in each item's Basis of Issue Plan (BOIP). The BOIP details for each LIN what types of units will receive the equipment and what LINs are being replaced.

Army modernization through BOIP is a continuous process, and at times documentation lags due to many different factors. For example, after 2001, the requirement to prepare certain units for deployment coupled with rapid procurements and Army force structure growth/redesigns, resulted in deliveries of equipment in advance of unit document adjustments, causing a tremendous increase in the time it took for unit command plans to be updated with the new equipment requirements. Documentation lag was exacerbated by the rapid force and equipping changes made within the Army over the last decade.

The documentation lag resulted in more modern but undocumented equipment being used to substitute for the less modern but documented requirement. For example, the older M16A2 rifle was the documented rifle, but the unit had on-hand the more modern undocumented M4A1. The Army has the means and methods to track substitution described above. For both near-term readiness and recognition of document lag the Army uses an equipment substitution process as part of its inventory management.

Equipment substitution falls into two categories, replacements and supply catalog substitutes. The replacements are normally new items intended to permanently replace the item listed on the unit's authorization document. The supply catalog lists valid substitutes for existing requirements. These substitutes are either modern items or older items. They have similar capabilities to the required item and are suitable for deployment with the unit. Older substitutes are temporary solutions while modern substitutes may be long-term solutions.

The following is an example of substitution. If a unit is required to have the M4A1 rifle but has on-hand the older M4 rifle, the Army considers the M4 rifle to be a valid substitute for the M4A1. In this case, the M4 carbine is a modern substitute. An older substitute, but still considered modern, is the M16A2 rifle. Both the M4 and M16A2 are similar in capability to the M4A1 and are deployable. The use of substitutes makes a significant difference in EOH percentages from a readiness or modernization point of view.

Readiness EOH percentages are reported by the Secretary of the Army during Congressional testimony and include all substitute items described above. Based on November 2014 data, the projected Army EOH percentage for end of FY 2015 is 89.89 percent, 92.70 percent for the AC, 86.76 percent for the ARNG, and 88.36 percent for the USAR. These percentages reflect the Army's potential "go-to-war" levels, meaning this equipment will be available for use in combat anywhere in the world.

A modified version of EOH (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 percentages for the Army is 83.87 percent; 92.27 percent for the AC, 75.70 percent for the ARNG, and 73.99 percent for the USAR.

The MEOH allows the Army to measure the equipping quality of the force over time at the aggregate and component levels. The MEOH methodology clearly indicates that Reserve forces have less modern equipment then the AC.

Using both the EOH and MEOH the Army can gauge the sufficiency, i.e. do we have enough equipment, and modernization levels of the force. The Army will redistribute and/or buy new equipment to meet equipping and modernization shortfalls. Section B discusses equipping and modernization shortfalls in terms of cost.

B. Shortage Costs

The Army determines the shortage in quantities for all requirements and then multiplies this against the procurement unit cost for a calculated shortage cost. The procurement unit cost is the procurement funding required to produce and field the item to a unit. The shortage quantities should reflect the MEOH discussed above to be most accurate.

For the NGRER Chart 1-2 format, the Army excluded both older substitutions and undocumented modern substitutions for EOH and MEOH calculations. The Army typically does not use this methodology because it artificially increases equipping and modernization shortage levels. To fully show the significance of this, Table 2-26 compares the Army's equipping requirements to on-hand inventory segregated into columns showing modernization and respective shortfall costs building to the Army's "go-to-war" or readiness equipping level (EOH) discussed earlier.

Starting from left to right on Table 2-26, we can see the value by component and total Army for all equipment documented in the operational or fighting force of the Army. The equipment matching column shows the cost and percentage of equipment that matches documented requirement. The equipment exceeding column shows the cost and percentage of equipment that exceeds the modernization levels of the documented piece of equipment. This equipment may not be fully documented but needs to be counted to present leaders with an accurate picture of the Army's EOH and modernization levels.

Equipment below modernization levels can be deployed with approval from Department of the Army but is usually suitable only for training. The total Go-To-War column simply adds the matching, exceeding, and below columns to get an overall component or Army readiness EOH.

The current modernization shortfall looks at equipment below modernization levels and adds equipment identified for divestment. The EOH shortfall column identifies the cost of what it would take to fill all equipment shortages in a component and the Army. Note that the Total Army modernization and EOH shortfalls are smaller than the Reserve shortfalls because the Total Army shortfall accounts for redistribution of assets that may be excess within a component but can fill a shortage in another component. So an M4A1 rifle excess in the AC could be used to fill a shortage in the Army Reserve. Active Army shortfalls are minimized because of the inclusion of TPE and Depot assets. In practice TPE and Depot equipment can go to any component.

The key point however is not including equipment that exceeds modernization levels, could result in an artificial increase in the current Modernized and EOH shortfalls. The Army MEOH methodology provides leaders with a more accurate picture of the modernization and equipping shortfalls of the force.

Table 2-26. "Go to War" Readiness and EOH

"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	$205,947,353,236	$175,452,118,698	$2,367,197,394	$2,840,362,659	$182,482,719,945	$28,128,037,144	$23,464,633,292
	% Fill	100.00%	91.71%	0.56%	0.23%	92.70%	7.73%	11.39%
Army National Guard	$ Value	$120,182,725,490	$88,118,768,820	$2,927,759,522	$3,333,736,926	$92,765,420,456	$29,136,197,149	$27,417,305,034
	% Fill	100.00%	75.02%	0.68%	11.07%	86.76%	24.30%	22.81%
US Army Reserve	$ Value	$34,604,779,433	$22,995,105,291	$1,308,744,157	$728,548,911	$24,764,009,279	$10,300,929,985	$9,840,770,154
	% Fill	100.00%	73.28%	0.71%	14.37%	88.36%	26.01%	28.44%
Total Army**	$ Value	$360,734,858,160	$286,565,992,809	$6,603,701,072	$6,902,648,495	$300,012,149,679	$67,565,164,278	$60,722,708,480
	% Fill	100.00%	83.25%	0.62%	6.02%	89.89%	16.13%	16.83%
			83.87%					

To further contrast the key differences between the Army's methodology and the NGRER Chart 1-2 format, we have displayed them below in Table 2-27 (Army Method) and Table 2-28 (NGRER Chart 1-2 method) based on the dollar value of equipping shortfalls. The NGRER Chart 1-2 method overstates equipping shortages by approximately $3.16B across the Army.

Table 2-27. Army Method

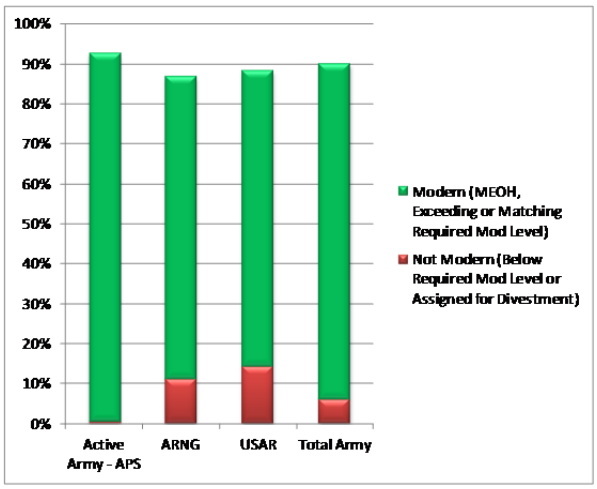
Army Method (excludes less modern subs and includes undocumented modern equipment)								
	Requirements ($)		On-Hand ($)		Shortage ($)		Shortage (% of Req'd)	
Active Army	$	205,947,353,236	$	182,482,719,945	$	23,464,633,292		11.394%
ARMY NATIONAL GUARD	$	120,182,725,490	$	92,765,420,456	$	27,417,305,034		22.813%
US ARMY RESERVE	$	34,604,779,433	$	24,764,009,279	$	9,840,770,154		28.438%
Total	**$**	**360,734,858,160**	**$**	**300,012,149,679**	**$**	**60,722,708,480**		**16.833%**

Table 2-28. NGRER Chart 1-2 Method

NGRER Chart 1-2 Method (includes less modern subs and omits undocumented modern equipment)								
	Requirements ($)		On-Hand ($)		Shortage ($)		Shortage (% of Req'd)
Active Army	$	205,947,353,236	$	180,664,252,320	$	25,283,100,916	12.276%
ARMY NATIONAL GUARD	$	120,182,725,490	$	91,743,610,039	$	28,439,115,451	23.663%
US ARMY RESERVE	$	34,604,779,433	$	24,443,724,519	$	10,161,054,914	29.363%
Total	**$**	**360,734,858,160**	**$**	**296,851,586,878**	**$**	**63,883,271,282**	**17.709%**

C. Qualitative vs. Quantitative Analysis of Equipment On-hand

Overall, the Army's "go-to-war" EOH is 89.89 percent but when we remove less modern substitutions the Army's MEOH is 83.87 percent. The chart to the right shows the inventory as a percentage of the total requirement in two categories. The first category is Modern or MEOH and the second category is Not Modern or equipment below requirement modernization level but authorized for deployment.



The equipment on-hand rates only tell part of the equipment story. Current and projected modernization at the aggregate level and for specific capabilities must be measured to ensure critical gaps are addressed. Throughout this report, the tables and charts refer to LIN requirements and inventory. As detailed above, the documentation of requirements is a complex process aimed at balancing readiness and modernization. A close look at LINs as a capability is necessary to understand the EOH and progress in modernizing the equipment addressing a specific capability.

1. Assessment of Specific Examples of Capabilities

The Army Equipment Program supports Army equipment modernization by focusing on incremental improvements to existing systems as the first option and building new systems only by exception. Procurement objectives are smaller as resources are constrained. This strategy requires the Army to manage the Army Procurement Objective, the constrained and affordable quantity, against the Army Acquisition Objective, the unconstrained quantity, across time to address affordability and changing requirements. Major shortfalls in equipment by individual LIN provide a narrow metric and should be broadened to look at capabilities and modernization levels.

At the specific capability level, the group of LINs that provide a capability is examined to determine the overall EOH and progress toward modernization objectives. An example of a group of LINs is detailed below.

a. Medium Cargo Lift

Blackhawk helicopters provide medium cargo lift capability. The Army has procured several models of Blackhawk helicopters over time. The UH-60A was the first helicopter procured to

replace the old UH-1 Huey (Vietnam-era) helicopter. Subsequent improvements came with upgrade of the UH-60A to the UH-60L model, then the UH-60M (most modernized variant). All models of the Blackhawk helicopters are in service; however, some of older A-model helicopters are being converted to the L-Model through the A to L modification program. Beginning in FY 2018, the Army will begin recapitalizing the L-Model from an analog (gauges) to digital (multi-functional displays and network enabled). This L-Model upgrade will be designated as the V-Model.

Table 2-29 shows the 2001 and the 2014 inventory of Blackhawk helicopters. In 2001, the medium cargo lift capability was met with UH-1 Huey Helicopters and Blackhawk Helicopters. The total inventory of Blackhawks in 2001 was 1,532 or 71 percent of the total requirement for 2,135 helicopters. In 2014, the total requirement for Blackhawk helicopters was 2,135 with 1,183 for the AC, 849 for the ARNG and 79 for the USAR. The Army on-hand inventory is shown by major model. In 2001, the Army did not have any M-Model Blackhawks but by the end of FY 2014 the Army had 644.

The A-model and older L-model helicopters are in-service and deployable but expected to be converted or divested as the Army modernizes to the M-model helicopter. The Army modernized each component over time. The Army continues to procure M-Model Blackhawks to meet critical capability gaps, reduce the number of variants and address obsolescence before it becomes a critical issue.

Each component will be modernized based on Army priorities and requirements. The UH-60M Model Multi-Year Procurement program currently allocates 60 helicopters to ARNG for FY 2014–FY 2015 procurements and 6 to USAR. The recent Aviation Restructure Initiative is expected to change the number of Blackhawk Helicopters required in each component.

Table 2-29. Blackhawk Helicopters

Backhawk Helicopters		Active (1,183)**		ARNG (849)		USAR (79)		Army (2,135)	
Variant	ML	FY2001	FY2014	FY2001	FY2014	FY2001	FY2014	FY2001	FY2014
A-Model		587	256	432	401	0	0	1,019	657
L-Model		393	408	120	347	0	79	513	834
M-Model*		0	519	0	101	0	24	0	644
TOTAL		980	1,183	552	849	0	103	1,532	2,135
ML = Modernization Level									

* Includes Special Operation Force variants.
** AC inventory includes helicopters undergoing recapitalization for all components.

For high density items (mostly Soldier weapons and support items), looking at all the LINs that are associated with a capability is even more important to understand the near-term readiness and long-term modernization process. Table 2-30 shows a capability in transition where older items are being considered for divestment. In this case, the requirement for Grenade Launcher does change as force structure changes. When the Army grows, the requirements will increase faster than other less force-structure dependent items. As the Army reduces, critical decisions concerning war reserve contingency stocks must be made as part of the divestment plan.

b. Grenade Launchers

The M203 and M203A1 Grenade Launchers are expected to be placed in war reserve or divested as the new Grenade Launcher (M320 and M320A1) is procured and delivered to units. Table 2-30 shows that the M320 series launcher is filling 60.9 percent of the requirement. The M203A2 remains a deployable and therefore a modern launcher and together with the M320 series more than meets the Army's requirements for grenade launchers. The Army's modernization goal is to replace all of the M203 series and only retain the newest (M203A2) where necessary to meet war reserve or other contingency stocks.

Table 2-30. Grenade Launchers

Grenade Launchers		Active		ARNG		USAR		Army	
Model	ML	Required	On-Hand	Required	On-Hand	Required	On-Hand	Required	On-Hand
M203 &A1		28,313	16,732	24,324	5,383	7,795	5,366	60,432	27,481
M203A2			22,293		9,193		2,228		33,714
M320			22,450		14,152		231		36,833
Total			61,475		28,728		7,825		98,028
Percent Fill (Most modern only)			79.3%		58.2%		3.0%		60.9%
ML = Modernization Level									

c. Medium Tactical Vehicles

The Army's Medium Truck fleet has undergone dramatic changes since 2001. Table 2-31 shows the inventory of medium tactical trucks in 2001 and at the end of FY 2014. The "Not Modern" trucks were the M35 series (manual shift) 2 ½ ton trucks circa 1950s. The "Modern" trucks were the first generation Family of Medium Tactical Vehicles (FMTV) that were first delivered to the Army in the 1980s. The "Most Modern" trucks are less than 10 years old and represent the newest trucks to include armor-capable trucks. Over the past 13 years, the Army has divested the 1950s trucks and expects to divest some of the first generation FMTVs.

Table 2-31. Medium Tactical Vehicles Inventory 2001 & 2014

Medium Tactical Vehicles		Active		ARNG		USAR		Army	
MTV	ML	FY2001	FY2014	FY2001	FY2014	FY2001	FY2014	FY2001	FY2014
Not Modern		37,107	2,410	38,315	2,369	14,393	1,164	89,815	5,943
Modern		14,453	18,473	5,030	12,631	2,863	4,219	22,346	35,323
Most Modern		802	11,912	0	13,609	0	5,506	802	31,027
TOTAL		52,362	32,795	43,345	28,609	17,256	10,889	112,963	72,293
ML = Modernization Level									

There are over 60 different LINs or models of medium tactical trucks. Table 2-32 combines different variants of the three categories explained above. The total requirements do not change but are shifted between the variants as force structure changes and newer trucks become available to replace the older variants. Since 2001, the Army procurement of FMTVs increased dramatically to support rapid modernization and to fill existing shortages. This was necessary because most of the fleet was old and difficult to sustain. Current resource constraints have required the Army to assume significant risk in modernization, especially in medium trucks. The Most Modern inventory accounts for 47.6 percent of the requirement. At the current procurement rates, the Army cannot prevent the shortages and age from increasing the risk. Within 10 years, most of the Modern inventory will become difficult to sustain and be considered Not Modern.

Table 2-32. Medium Tactical Vehicles – End FY 2014

Medium Tactical Vehicles		Active		ARNG		USAR		Army	
MTV	ML	Required	On-Hand	Required	On-Hand	Required	On-Hand	Required	On-Hand
Not Modern		27,945	2,410	26,884	2,369	10,414	1,164	65,243	5,943
Modern			18,473		12,631		4,219		35,323
Most Modern			11,912		13,609		5,506		31,027
TOTAL			32,795		28,609		10,889		72,293
Percent fill with Most Modern			42.6%		50.6%		52.9%		47.6%
ML = Modernization Level									

2. Examples of Specific Capability Group Shortages

Throughout this chapter there are specific LIN shortages identified. In most cases, a deeper analysis of the shortage is needed to understand the modernization progress, modernized substitutes, and opportunities for redistribution. The examples below address the shortages by looking at all the LINs associated with the capability.

a. Fixed Wing Aircraft Operational Support Airlift

To understand the requirements and shortages, the analysis must go beyond looking at one item. It is essential to look at all the variants contributing to the requirement and to the inventory as well as the strategy and future requirements. The analysis of the Operational Support Airlift fleet provides a relevant example. While the current projected shortages for the ARNG for the C-23B is 50 at a cost of $1.8B, the analysis below provides a more holistic and relevant assessment of the requirements, shortages, and resulting costs.

The Army Capability Portfolio Review held in 2010 re-evaluated the requirements for Operational Support Airlift fixed wing aircraft mission. Table 2-33 shows the current documented requirements, and Table 2-34 shows the pending revisions based on the Army Capability Portfolio Review. The review addressed missions, capabilities, fleet age, and acquisition of new aircraft. Table 2-33 shows that the inventory is well short of the current requirement.

Table 2-33. Operational Support Airlift (Current)

Operational Support Airlift (Current)		Active		ARNG		USAR		Army	
Model	ML	Required	On-hand	Required	On-hand	Required	On-hand	Required	On-hand
C-26		47	3	106	7	59		212	10
C-23B			27		0		0		27
UC-35A/B			16				12		28
C-12 (F/U/R/V)			16		23		7		46
COTS Aircraft			39		13		6		58
TOTAL		47	101	106	43	59	25	212	169
ML= Modernization Level									

The revisions (Table 2-34) show the AC requirement at 16, ARNG at 48, and USAR at 48, for a total of 112 aircraft. In addition, the C-23B aircraft requirement is being removed and on-hand inventory will be divested over time. The C-12F variant is currently undergoing modification as a means of reducing fleet age and addressing key capability gaps. The Future Utility Aircraft is

the new procurement program aimed at replacing existing aircraft and meeting the revised requirements shown below.

The aircraft inventory listed in Table 2-34 indicates that the projected inventory exceeds the requirement (134 on-hand against 112 required). Many of the aircraft currently on-hand are older variants that are expected to be replaced by the Future Utility Aircraft. Production of the Future Utility Aircraft begins in FY 2016. By FY 2020, the Army will have procured 32 new aircraft.

Table 2-34. Operational Support Aircraft (Revised)

Operaitonal Support Airlift (Revised)		Active		ARNG		USAR		Army	
Model	ML	Required	On-hand	Required	On-hand	Required	On-hand	Required	On-hand
C-12 (U/R/V)		16	20	48	55	48	29	112	104
UC-35A/B			12		4		12		28
C-12F			2						2
Future Utility Aircraft									0
TOTAL		16	34	48	59	48	41	112	134
ML= Modernization Level									

b. Single Channel Ground and Airborne Radio System

Overall, the Army's requirement for Single-channel Ground and Airborne Radio System (SINCGARS) vehicle-mounted tactical radios (AN/VRC-87 thru 91) is 244,855. The total inventory of systems is 246,803. The Army is not procuring the SINCGARS, and all shortages are handled through redistribution and fielding of new radios that replace SINCGARS.

AN/VRC-90 and AN/VRC-91 have one and two radio transceivers respectively. The A-model is the first generation replacement for the Vietnam-era analog radios. The improvements to the radio (D-model) added data modes, and the F-model reduced size, weight, and added forward error correction.

Table 2-35 shows the requirements and inventory for the AN/VRC-90/91 radios. The overall fill percentage is 98 percent. There are sufficient modernized substitutes to fill the remaining two percent shortage as a near and mid-term solution until the next generation of radios fills the shortages and replaces the oldest variants. Development and procurement of the next generation of radios to include the Joint Tactical Radio System and other hand-held radios will replace the SINCGARS over time.

Table 2-35. SINCGARS VRC-90/91 Radios

Tactical Radio (Vehicle Mounted)		Active		ARNG		USAR		Army	
Model	ML	Required	On-hand	Required	On-hand	Required	On-hand	Required	On-hand
AN/VRC-90/91 A		78,357	4,281	68,338	14,140	33,224	6,068	179,919	24,489
AN/VRC-90/91 D			5,321		6,311		2,118		13,750
AN/VRC-90/91 F			70,590		45,177		22,248		138,015
TOTAL		78,357	80,192	68,338	65,628	33,224	30,434	179,919	176,254
ML= Modernization Level									

D. Analysis of Sources of Supply

The Army has two primary sources of supply to establish and maintain inventory: Procurement and Stock Funded. New equipment is procurement funded. Procurement funding is centrally managed, and procurements are centrally allocated and distributed. Once all the units have received the required quantities, most items under $3,000 are then classified as Stock Funded. Stock funding (Operation & Maintenance Appropriations) is decentralized, and units determine priorities for replacing worn-out items. Stock Funded items are normally Soldier support items with high density but low cost.

The Stock Funded item shortages account for only $252M of the total shortage cost. The chart to the right shows the component shortages for stock funded items. Units are provided funds to order shortages of stock funded items. Commanders determine the priorities and order as required to meet mission requirements.

Stock Funded Item Total Shortage	
Component	Cost ($M)
Active Army	1
ARNG	187
USAR	64
Total Army	252

Chapter 3
United States Marine Corps Reserve

I. Marine Corps Overview

"The United States Marine Corps is the nation's crisis response force. Since our founding in 1775, Marines have answered the nation's call, faithfully protecting the American people and maintaining a world-class standard of military excellence."[1] No matter where they serve or what the mission, the Marine Corps continues to be the Nation's Expeditionary Force in Readiness. Since the founding of our Corps, Marines have been guided by Corps values: honor, courage, and commitment. Fiscal uncertainty has threatened both our capacity and capabilities, forcing us to sacrifice our long-term health for near-term readiness. Despite these fiscal challenges, we remain committed to fielding the most ready Marine Corps the Nation can afford. Around the globe Marines stand ready to engage America's adversaries or respond to any emerging crisis.

> Throughout more than a decade of sustained operations ashore in Iraq, Afghanistan, and elsewhere, we continued to deploy thousands of Marines aboard amphibious warships around the globe. The Navy and Marine Corps remains postured to provide persistent presence and engagement, maintaining a constant watch for conflict and regional unrest. Well-trained Marine units embarked aboard U.S. Navy warships increase the nation's ability to deter and defend against emerging threats. Our adaptability and flexibility provide unmatched capabilities to combatant commanders. [2]

A. Marine Corps Planning Guidance

1. Strategic Concept of the Marine Corps

We are committed to optimizing our force structure for crisis response and forward presence.

> As we drawdown our force and focus the Marine Corps toward the future, we see an opportunity to re-set our warfighting institution and foster a *Reawakening* within our Corps. For the past 12 years of war, Marines have performed heroically on the battlefield. In Iraq and Afghanistan, Marines have carried on the Corps' legacy of warfighting prowess, and every Marine should be proud of that accomplishment. But as the preponderance of our Marine forces return from Afghanistan and we are focusing our efforts on the foundations of discipline, faithfulness, self-excellence and concerned leadership that have made us our Nation's premier, professional fighting force. This is the time to reset and prepare for future battles. [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.

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[1] *The Posture of the United States Marine Corps*, March 12, 2014, pg. 2.
[2] Ibid., pg. 3
[3] Ibid., pg. 14

> The Marine Corps' commitment to the American people is as strong today as ever in its 238-year history. That commitment is backed equally by bold Active and Reserve Component Marines and Sailors who are experienced in taking the fight directly to the enemy across the globe since 2001. Our Marines have been doing what they have done best since 1775: standing shoulder-to-shoulder to fight and win the Nation's battles. We don't differentiate; all Marines—whether Reserve or Active Component—are disciplined, focused, and lethal. We are a Total Force.[4]

B. Marine Corps Equipping Policy

The Marine Corps develops a Total Force Approved Acquisition Objective for each new item of equipment using an integrated system of dynamic processes. The Marine Corps also uses a push-fulfillment process to sustain major end items. This materiel management approach ensures that equipment is sourced and aligned with the Commandant of the Marine Corps' equipping strategies. 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). Marine Corps Systems Command (MARCORSYSCOM) procures equipment for the RC, with all equipment above the T/A maintained "in-stores" at Marine Corps Logistics Bases. Pre-positioned equipment, can be used to satisfy the resourcing of the delta of T/E minus T/A for activated units. This methodology for "global sourcing" has been used effectively to satisfy both AC and RC unit equipment shortfalls.

D. Initiatives Affecting RC Equipment

As our Nation continues to face fiscal uncertainty, the Marine Corps will be forced to reduce or cancel modernization programs and infrastructure investments while maintaining readiness for both AC and RC Marines. As we enter into FY 2015 and beyond the RC's ability to maintain its legacy equipment will become more costly which in turn will have a negative effect on unit training and overall readiness.

E. Plan to Achieve Full Compatibility between AC and RC

Concurrent horizontal fielding of new equipment to the AC and RC by MARCORSYSCOM maintains common and interchangeable capability sets within the Total Force. This fielding policy complements the "mirror-imaging" and push-fulfillment sustainment policies, both of which significantly contribute to optimizing equipment supportability and associated unit operational readiness.

[4] *Commander, Marine Forces Reserve Congressional Testimony*, March 26, 2014, pg. 1.

II. Marine Corps Reserve Overview

A. Current Status of the Marine Corps Reserve

1. General Overview

Top RC Equipping Challenges

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

The Commandant of the Marine Corps (CMC), in his March 2014 testimony to Congress on the Posture of the United States Marine Corps, stated that "the Marine Corps provides an affordable insurance policy for the American people"[5]. As an integral part of the Total Force, Marine Forces Reserve plays a key role in providing that insurance policy. Reserve units are organized, trained, and equipped in the same manner as their active counterparts and are operationally interchangeable with them. All Marines stand ready to answer their Nation's call to arms.

> As of Jan. 1, 2014, 62,688 Marines from the Ready Reserve executed a total of 82,424 sets of mobilization orders. This operational tempo has enabled Marine Forces Reserve to remain an operationally-relevant Force over the last 13 years. Marine Forces Reserve has sourced preplanned, rotational, and routine combatant commander and Service requirements across a variety of military operations.[6]

Marine Forces Reserve (MARFORRES) has evolved from a strategic capability to an operational and strategic capability. In the operational role, MARFORRES sources preplanned, rotational, and routine combatant commander and Service requirements across the spectrum of military operations. 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 KC-130J has already been fielded to the Marine Corps AC, while initial fielding to the RC began with arrival of the first aircraft in FY 2014. The remaining KC-130T aircraft are projected to remain in RC service until FY 2022. The two aircraft models are very different airframes, each having completely different logistic, maintenance, and aircrew requirements. The longer we maintain both airframes, the longer we have to invest in twice the logistics, maintenance training, and aircrew training. The total cost to purchase all 28 RC KC-130J aircraft is more than $2B. Only 10 of the remaining 26 required airframes are programmed across the Future Years Defense Program (FYDP).

The MQ-21A[7] will provide the Marine Expeditionary Force and subordinate commands (divisions and regiments) a dedicated intelligence, surveillance, and reconnaissance system capable of

[5] *The Posture of the United States Marine Corps,* March 12, 2014, pg. 2.
[6] *Commander, Marine Forces Reserve Congressional Testimony,* March 26, 2014, pg. 2.
[7] The RQ-21A Blackjack was re-designated as the MQ-21A Blackjack to accurately reflect the multi-role mission that this unmanned aircraft system will assume upon fielding.

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 is scheduled to receive the MQ-21A at the end of the current fielding plan in FY 2021. Lack of these systems creates a significant capability gap between RC and AC forces.

2. Status of Equipment

With the unique geographic dispersion of our Reserve units and their limited storage capacity, proper accountability of equipment and validation of the T/A is essential while maintaining overall readiness. MARFORRES will continue to meet the Commandant's first priority of providing the best trained and equipped Marine units while also protecting the enduring health of the operational reserve. The RC has kept the equipment sets for units augmenting and reinforcing the AC on par with the AC.

a. Equipment On-hand

The Marine Corps has maintained the RC's ability 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 MARFORRES units for the period FY 2016 through FY 2018. These on-hand quantities do not reflect the additional equipment maintained by Marine Corps Logistics Command to fill the delta 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 will directly enhance the RC's current unit training allowances.

b. Average Age of Major Items of Equipment

Table 2 Average Age of Equipment provides the average age of selected major equipment items. The average age of RC equipment is 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 new equipment fielding already planned or have programs that will extend the life cycle of that equipment through upgrades and modifications.

c. Compatibility of Current Equipment with Active Component

Although complete compatibility is difficult to achieve due to Service level priorities, equipment compatibility between the AC and RC is closer than ever. Most existing cases where compatibility is lacking are the result of fiscal constraints that have delayed the RC fielding of new equipment programs.

d. Maintenance Challenges

Several factors lead to short and long term RC maintenance challenges. These factors include personnel and unit structure realignment. Service actions resulting from a recent force structure review group changed the characteristics of some RC units, which subsequently changed equipment sets and maintenance requirements. In these cases, Marines must be retrained to properly perform preventive maintenance. Lack of proper support facilities, lack of logistics information systems training, and reduced quantities of maintainers also add to these challenges. In an effort to alleviate equipment downtime, MARFORRES funds maintenance support teams that augment organic maintenance capabilities, ensuring equipment is available and ready to

train Marines. Historically, maintenance support teams were sourced using Overseas Contingency Operations (OCO) funding. With the reduction of operations overseas and the baseline funding throughout DOD, the use of OCO funding to support this maintenance effort no longer exists. To provide the RC maintenance capabilities in the upcoming fiscal year, budgeting for maintenance support teams will have to be requested in the baseline budget as part of the budget process.

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 increase 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 Vehicles (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 AAV service life be extended to 2035.

- Aviation Modernization: The RC is also included in the Marine Corps Aviation Plan. Utilizing FY 2014 National Guard and Reserve Appropriation (NGREA) funding, the RC is procuring the Helmet Display Tracking System (HDTS). The HDTS is a sensory gathering, display, and sight system that is being integrated into the AH-1W attack helicopter.

- 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

Budget cuts will adversely affect the RC's ability to perform preventive maintenance and limited technical inspections. The use of Contracted Logistics Support (CLS) teams has become an integral part to the sustainment of RC equipment. Lack of funding to continue the use of the CLS teams has the potential to downgrade overall force readiness.

C. Future Years Program (FY 2016–FY 2018)

1. FY 2018 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 CMC guidance. The RC competes equally with the AC in fielding decisions.

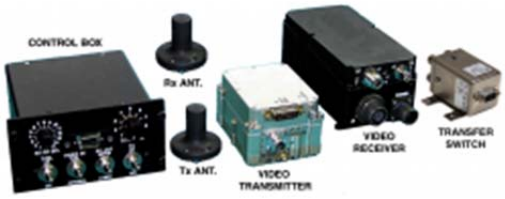
2. Anticipated New Equipment Procurements

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 2009, 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. Fielding began in FY 2014 with five aircraft scheduled to be delivered to the RC by the end of FY 2015 and 10 aircraft 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 $1.5B to purchase the additional 20 aircraft.

b. Night Targeting System Upgrade

The Night Targeting System Upgrade (NTSU) is required for the AH-1W Cobra to improve system performance and meet aircraft service life expectancy through 2021. The NTSU provides a night/adverse weather forward-looking infrared (FLIR) and laser designator for tube launched, optically tracked, wire guided (TOW) and Hellfire missile capability. In addition, NTSU provides enhanced conventional weapons delivery by utilizing a laser ranging system. The improvements in the optics significantly increase the ability to detect, recognize, identify, and engage targets at stand-off ranges in all weather and lighting conditions. Improvements in design and removal of obsolete components result in increased reliability and maintainability.



c. Tactical Video Data Link

Tactical Video Data Link (TVDL) provides real-time, high-quality video imagery and data captured by unmanned aircraft payloads or ground-based sensors to be displayed directly to the aircrew. This saves the need for lengthy radio dialogue by creating a common visual

language among all forces in the battlespace and dramatically shortening the sensor-to-shooter loop. The TVDL augments current systems by providing helicopter pilots video data from off-board sensors that reduce target identification times and improve precision targeting capability. The data link reduces the helicopter's exposure to battlespace threats and increases stand-off distances from those threats as critical airborne attack tactics and engagement scenarios are formulated. TVDL also supports advance video display of forward arming and refueling points to facilitate the rapid delivery of aviation ground support.

d. Ground/Air Radar Systems

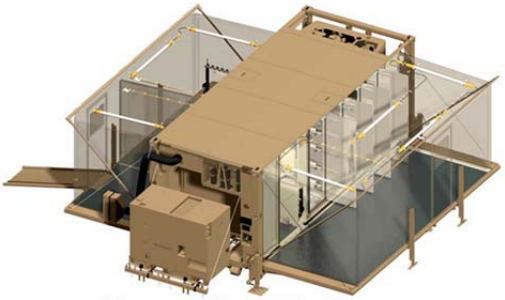
A highly mobile multi-mission radar system designed to fully support worldwide expeditionary requirements is needed to replace legacy radar systems. An advanced radar system is required to provide a multifaceted detection and tracking capability to enable engagements of a wide range of hostile threats. Currently in the engineering and development phase, 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 (AESA) 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.

e. 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.

3. Anticipated New Equipment Requirements

a. Mobile Integrated Remains Collection System


Processing Platform

The Marine Corps' sole mortuary affairs unit is a Personnel Retrieval and Processing (PRP) Company, a RC unit established in 2005. The United States Army, the executive agency for mortuary affairs, utilizes the Mobile Integrated Remains Collection System (MIRCS); however, the PRP Company does not currently possess a similar capability. The MIRCS is a modular, self-contained, International Organization for Standardization (ISO) compatible platform that is used for processing and storing human remains to support mortuary affairs operations. The unit has a refrigerated storage area capable of storing sixteen remains, a processing area, an administrative area, and supply storage compartments. The MIRCS comes equipped with all components necessary to deploy, move, and operate in support of military and peacetime operations. The MIRCS is transportable via a Logistics Vehicle System Replacement with palletized load system. This system will replace the large logistical footprint of general purpose tents, stand-alone refregeration units, generators, and air conditioners that PRP Companies currently train with. Three Marines can set up and operate this self-contained system in approximately 30–40 minutes.

b. 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.

4. Anticipated Transfers from AC to RC

Two KC-130J aircraft are scheduled to be transferred from the AC to the RC in in FY 2015 to continue the transition plan from the KC-130T. Two MV-22B aircraft are scheduled to be transferred from the AC to the RC in FY 2015 and 12 in FY 2016 to complete the transition plan from the CH-46E. Three AH-1W aircraft are scheduled to be transferred from the AC to the RC in FY 2015 to backfill previous foreign military sales and preapproved Operation Enduring Freedom support requirements.

5. Anticipated Withdrawals from RC Inventory

The last eight CH-46E aircraft will be removed from the RC inventory in FY 2015 as part of the MV-22B transition.

6. Equipment Shortages and Modernization Shortfalls at the End of FY 2017

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 2018. *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 the Marine Corps end strength transitions down, Marine Forces Reserve's commitment to organize, man, train, equip, and provide forces to augment, reinforce, and sustain the AC is vital to improving Total Force integration and expeditionary capability. The successful completion of our force structure review, concurrent with the above activities, will enable the RC to possess the assets to accomplish its mission. We live in a world of increasingly complex security challenges across the globe and fiscal uncertainty at home, but we stand ready, relevant, and responsive to meet any current operational requirements and energetically respond to future emergent contingencies.[1]

[1] *Commander, Marine Forces Reserve Congressional Testimony*, March 26, 2014, pg. 24.

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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 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Aircraft							
Aircraft, Fighter/Attack, F/A-18A++	F/A-18A++	$54,436,016	11	11	11	11	15
Aircraft, Fighter, F-5F	F-5F	$14,830,970	1	1	1	1	1
Aircraft, Fighter, F-5N	F-5N	$702,466	11	11	11	11	13
Aircraft, Refueling/Cargo, KC-130J	KC-130J	$80,121,410	5	5	7	8	8
Aircraft, Refueling/Cargo, KC-130T	KC-130T	$45,480,270	14	14	14	14	0
Aircraft, Utility/Cargo, UC-12W	UC-12W	$10,000,000	2	2	2	2	2
Aircraft, Utility/Cargo, UC-35C/D	UC-35	$8,179,661	5	5	5	5	5
Helicopter, Attack, AH-1W	AH-1W	$18,935,714	18	18	30	30	30
Helicopter, Utility, UH-1Y	UH-1Y	$30,826,000	9	12	18	18	18
Helicopter, Cargo, CH-53E	CH-53E	$37,658,528	6	6	6	6	8
Tilt-rotor, Cargo, MV-22B	MV-22B	$73,711,789	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	$6,500,000	1	1	1	1	1
Flight Training Device, KC-130J	KC-130J FTD	$28,000,000	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	$7,000,000	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	$5,000,000	1	1	1	1	1
Flight Training Device, UH-1Y	UH-1Y FTD	$16,500,000	0	2	2	2	3
Flight Training Device, CH-53E	CH-53E FTD	$14,000,000	0	1	1	1	1
Containerized Flight Training Device, MV-22B	MV-22B CFTD	$12,000,000	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	1
Communications Data Link System (CDLS)	A0021	$324,501	2	2	2	2	2
Communications Platform, Air Defense (ADCP)	A0025	$907,000	3	3	3	3	3
Communications System	A0032	$1,325,179	16	16	16	16	16
Joint Services Workstation	A0060	$395,757	0	0	0	0	2
High Frequency Vehicle System	A0067	$53,234	149	149	149	149	226
AN/GRC-256A	A0068	$40,000	3	3	3	3	4
Transportable Ground Receive Suite (TGRS), Enhanced	A0090	$194,063	12	12	12	12	36
Radio Set, Dual Vehicle Adapter (DVA), 50-watt	A0097	$14,000	1,078	1,078	1,078	1,078	1,697

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Multifunctional Information Distribution System (MIDS) Low Volume Terminal (LVT) 11	A0099	$286,510	4	4	4	4	9
Survey Instrument, Azimuth	A0116	$220,000	10	10	10	10	10
Phoenix	A0122	$1,813,000	3	3	3	3	10
Remote Subscriber Access Module - Transition Switch Module (TSM)	A0124	$69,886	129	129	129	129	125
Deployable End Office Suite - Transition Switch Module (TSM)	A0125	$461,217	34	34	34	34	38
Tactical Handheld Radio (THHR)	A0129	$4,800	1,291	1,291	1,291	1,291	2,166
Deployable Integrated Transport Suite - Transition Switch Module (TSM)	A0132	$302,104	19	19	19	19	28
Radio Set	A0139	$47,828	73	73	73	73	109
Antenna, Communication, Trailer-mounted	A0149	$495,000	2	2	2	2	9
Radio Set	A0153	$224,839	38	38	38	38	63
Radar Set (LCMR)	A0169	$581,000	5	5	5	5	5
Communications Security Module (CSM)	A0173	$44,550	29	29	29	29	91
LAN Service Module (LSM)	A0174	$92,330	30	30	30	30	91
Computer Digital Data Transfer	A0175	$2,615	36	36	36	36	116
LAN Extension Module	A0176	$27,930	119	119	119	119	363
Application Server Module (ASM)	A0177	$14,980	30	30	30	30	182
Beyond Line of Sight Gateway (BLOS) Gateway	A0180	$140,000	2	2	2	2	2
Support Wide Area Network (SWAN) D V1	A0234	$80,000	21	21	21	21	33
Very Small Aperture Terminal - Medium (VSAT-M)	A0241	$90,000	8	8	8	8	13
SWAN D V3	A0242	$420,000	15	15	15	15	14
SWAN D Network Package	A0243	$90,000	34	34	34	34	120
SWAN D MRT	A0244	$105,000	5	5	5	5	11
Combat Operations Center (COC) V(3)	A0254	$1,848,286	8	8	8	8	8
Combat Operations Center (COC) V(4)	A0255	$1,372,700	19	19	19	19	19
HF Vehicle Radio System	A0266	$50,755	33	33	33	33	172
Combat Operations Center (COC) V(2)	A0271	$2,500,000	1	1	1	1	3
Mobile Tactical Air Operations Module (TAOM)	A0305	$2,657,000	1	1	0	0	0
SCA Multiband Networking Radio	A0336	$28,908	270	270	270	270	507
Tactical Exploitation Group - Remote Workstation w/Video Scout (TEG-RWS w/VSF)	A0383	$76,431	2	2	2	2	120
Digital Technical Control (DTC) Facility	A0499	$1,213,000	5	5	5	5	7
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	6	6	6	6	8
Joint Tactical Information Distribution System (JTIDS)	A0882	$683,000	3	3	3	3	3
Joint Enhanced Core Communications System (JECCS)	A0886	$2,543,653	0	0	0	0	5
Telecommunications Equipment (TROJAN LITE)	A0921	$536,000	0	0	0	0	1
Tactical Common Operational Picture (COP) Workstation	A0932	$10,000	172	172	172	172	172

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Radar Set, Firefinder	A1440	$7,500,000	5	5	5	5	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
Joint Surveillance Target Attack Radar System (JSTARS) Common Ground Station	A1520	$5,000,000	0	0	0	0	1
Radio Set	A1818	$55,874	18	18	18	18	17
Radio Set	A1957	$43,986	219	219	219	219	286
Radio Set, High Frequency, Manpack	A2042	$17,000	825	825	825	825	764
Radio Set, Multiband, Urban	A2043	$8,062	833	833	833	833	1,073
Radio Set, Multiband, Maritime	A2044	$7,431	268	268	268	268	755
Radio Set, Multiband, FALCON II	A2068	$27,450	930	930	930	930	1,853
Radio Terminal Digital, Troposcatter	A2179	$1,500,000	19	19	19	19	56
Facility, Anti-Air Warfare, Sector	A2390	$427,000	0	0	0	0	3
Tactical Air Operations Module	A2525	$8,054,500	2	2	2	2	2
Advanced Field Artillery Tactical Data System	A2555	$45,200	219	219	219	219	153
Target Locator, Designator & Hand-off System (TLDHS) (BLKII)	A2560	$27,000	157	157	157	157	237
Tactical SATCOM, Transportable (SMART-T)	A3232	$825,000	4	4	4	4	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	44	44	44	44	130
Air Conditioner, 5-ton, 60K, R-22	B0008	$20,000	107	107	107	107	176
Air Conditioner, 10-ton, 120K Btu, R-22	B0010	$30,000	10	10	10	10	12
Environmental Control Unit (ECU), 36K Btu, R-22	B0014	$14,500	375	375	375	375	525
Integrated Trailer, ECU and Generator (ITEG)	B0018	$85,000	24	24	24	24	30
Distribution System, Mobile Elect Power, 5kW (Indoor)	B0027	$4,500	180	180	180	180	197
Distribution System, Mobile Elect Power, 5kW (Outdoor)	B0028	$7,500	324	324	324	324	350
Distribution System, Mobile Elect Power, 15kW	B0029	$8,800	127	127	127	127	156
Distribution System, Mobile Elect Power, 30kW	B0030	$16,100	107	107	107	107	109
Distribution System, Mobile Elect Power, 100kW	B0031	$28,500	64	64	64	64	78
Distribution System, Mobile Elect Power, 300kW	B0032	$22,100	8	8	8	8	13
All Terrain Crane (ATC) MAC-50	B0038	$578,000	10	10	10	10	52
Airfield Damage Repair (ADR) Kit	B0039	$450,000	3	3	3	3	14
Full Width Mine Roller, ABV	B0058	$110,000	0	0	0	0	19
Medium Crawler Tractor (John Deer)	B0060	$325,000	42	42	42	42	56
Tractor, Rubber Tire, Articulated Steering, MP	B0063	$123,508	96	96	96	96	103
Lightweight Water Purification System	B0071	$194,580	14	14	14	14	45
Air Conditioner, 60Hz, 9K 1-PH, R-410A	B0074	$9,510	17	17	17	17	96
Grader, Road, Motorized, Armored	B0078	$236,008	16	16	16	16	21
Low Metallic Signature Mine Detector	B0102	$35,156	96	96	96	96	174

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Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Boat, Bridge Erection, Inboard Engine	B0114	$249,187	6	6	6	6	63
Interior Bay, M17	B0121	$111,968	48	48	48	48	108
Ramp Bay	B0122	$104,291	20	20	20	20	45
Bridge, Medium Girder, Dry Gap	B0152	$964,515	6	6	6	6	12
Container Handler, Rough Terrain, KALMAR	B0392	$525,000	5	5	5	5	8
M9 Armored Combat Earthmover	B0589	$1,000,000	4	4	4	4	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	1	1	1	1	9
Generator Set, 3kW, 60Hz, Skid-mtd	B0730	$9,922	253	253	253	253	378
Generator Set, 10kW, 60Hz, AMMPS, Skid-mtd	B0891	$19,912	189	189	189	189	356
Generator Set, 10kW, 400Hz, AMMPS, Skid-mtd	B0921	$21,273	10	10	10	10	12
Generator Set, 20kW, MMG-25	B0930	$16,380	23	23	23	23	82
Generator Set, 30kW, 60Hz, AMMPS, Skid-mtd	B0953	$22,046	106	106	106	106	271
Generator, Lightweight, Man-Portable	B0980	$5,262	109	109	109	109	249
Generator Set, 60kW, 400Hz, AMMPS, Skid-mtd	B1016	$29,793	6	6	6	6	12
Generator Set, 60kW, 60Hz, AMMPS, Skid-mtd	B1021	$26,956	126	126	126	126	237
Generator Set, 100kW, 60Hz, Skid-mtd, TQG	B1045	$67,000	59	59	59	59	99
Refueling System, Expedient, Helicopter	B1135	$101,863	8	8	8	8	9
Pump Module, Fuel (SIXCON)	B1580	$23,350	65	65	65	65	135
Pump Module, Water	B1581	$7,200	32	32	32	32	79
Roller, Compactor, Vibratory, Self-propelled	B1785	$155,150	8	8	8	8	10
Storage Tank Module, Fuel (SIXCON)	B2085	$6,948	167	167	167	167	429
Storage Tank Module, Water (SIXCON)	B2086	$5,524	87	87	87	87	307
Sweeper, Rotary, Vehicle Mounting	B2127	$215,781	5	5	5	5	6
Loader, Backhoe (BHL)	B2483	$122,622	28	28	28	28	34
Armored Extendable Boom Forklift (EBFL) Forklift, Variable Reach	B2561	$98,442	73	73	73	73	64
Forklift, Rough Terrain, Light Capability (LRTF)	B2566	$110,000	125	125	125	125	89
Purification System, Water, Tactical	B2605	$350,000	13	13	13	13	33
General Supply							
Multi-fuel Engine, Non-gasoline Burning Outboard Engine (NBOE)	C4548	$13,582	72	72	72	72	86
Device, Propulsion, Diver	C4549	$77,270	22	22	22	22	37
Raiding Craft, Combat, Rubber, Inflatable (CRRC)	C5901	$16,745	63	63	63	63	86
Motor Transport							
Equipment Transporter, Semitrailer Low-bed, 50-ton	D0002	$45,600	0	0	0	0	10
Truck, Armored, Cargo, 7-ton, w/Winch Reducible DFCS	D0003	$315,174	89	89	89	89	463
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	28	28	28	28	19

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
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	52	52	52	52	55
Truck, Utility, Expanded Capacity, Enhanced, M1152	D0022	$179,831	330	330	333	333	576
Truck, Utility, Expanded Capacity, Armament Carrier	D0030	$229,689	637	637	637	637	746
Truck, Utility, Expanded Capacity, G2/GP Vehicle	D0031	$204,413	106	106	106	106	129
Truck, Utility, ECV, TOW Carrier, Armored	D0032	$222,487	38	38	38	38	64
Truck, Utility, Expanded Capacity, Fully-armored (2-door)	D0033	$193,595	126	126	126	126	353
Truck, Utility, Ground Mobility Vehicle, Armored (4-door)	D0034	$321,959	70	70	70	70	239
Truck, Cargo, 7-ton, w/Winch	D0198	$227,989	699	699	699	699	440
Semitrailer, Refueler, 5000 gal	D0215	$214,064	21	21	21	21	128
Semitrailer, Low-bed, 40-ton	D0235	$61,710	43	43	43	43	55
Trailer, Cargo, Resupply for HIMARS	D0861	$56,156	36	36	36	36	36
Trailer, Tank, Water, 400 gal., 1.5-ton, 2-wheel	D0880	$12,955	180	180	180	180	264
Truck Cargo 22.5-ton, 10X10, LVSR	D0886	$319,529	121	121	121	121	325
Truck, Tractor, 10X10, LVSR	D0887	$330,000	39	39	39	39	59
Truck, Ambulance, 4 Litter, Armored, HMMWV	D1001	$137,638	74	74	74	74	87
Truck, Ambulance, 2 Litter, Soft Top, HMMWV	D1002	$68,212	37	37	37	37	38
Truck, RTAA, XLWB Cargo, 7-ton, w/Winch	D1062	$250,424	97	97	97	97	141
HIMARS, Armored Resupply Vehicle, Non-reducible	D1063	$404,398	36	36	36	36	36
Truck, Firefighting, Aircraft and Structure	D1064	$162,562	9	9	9	9	24
Truck, Dump, 7-ton, w/Winch	D1073	$238,105	53	53	53	53	34
Truck, Utility, Cargo/Troop Carrier, HMMWV	D1158	$60,409	466	466	466	466	1,116
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	32
Ordnance & Weapons							
Scout Sniper Mid-range Night Sight	E0020	$8,795	427	427	427	427	481
Portable Lightweight Designator Rangefinder (PLDR)	E0042	$79,400	57	57	57	57	108
Saber System	E0055	$1,010,000	92	92	92	92	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	172	172	172	172	172
Circle, Aiming	E0180	$3,725	96	96	96	96	96
Javelin	E0207	$133,063	67	67	67	67	64
Equipment Set, Night Vision	E0330	$116,014	24	24	24	24	24
Howitzer, Lightweight, Towed, 155mm	E0671	$2,500,000	48	48	48	48	48
Assault Amphibious Vehicle (AAV), Command	E0796	$2,000,000	4	4	4	4	9
AAV, Personnel	E0846	$2,000,000	46	46	46	46	178
AAV, Recovery	E0856	$2,000,000	5	5	5	5	9
Launcher, Rocket, Assault, 83mm	E0915	$37,604	213	213	213	213	243
Launcher, Tubular F/GM TOW Weapon System	E0935	$75,742	24	24	24	24	24

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
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	86	86	86	86	88
LAV, Logistics	E0948	$1,883,020	22	22	22	22	22
LAV, Mortar	E0949	$2,507,080	12	12	12	12	12
LAV, Maintenance/Recovery	E0950	$2,183,920	8	8	8	8	8
Machine Gun, .50 cal., Browning, HB Flexible	E0980	$8,118	544	544	544	544	642
Machine Gun, .50 cal.	E0984	$13,648	83	83	83	83	100
Machine Gun, Medium, 7.62mm, Ground Version	E0989	$6,000	1,338	1,338	1,338	1,338	1,444
Machine Gun, Heavy, 40mm	E0994	$15,320	468	468	468	468	557
Common Laser Rangefinder System	E1048	$26,236	511	511	511	511	557
Mortar, LW Company, 60mm, M224A1	E1065	$64,652	75	75	75	75	72
Mortar, Medium, 81mm, Extended Range	E1095	$121,855	75	75	75	75	76
Velocity System, Muzzle (MVS)	E1145	$25,000	18	18	18	18	18
Recovery Vehicle, Full-Tracked, Heavy	E1378	$2,748,846	6	6	6	6	22
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	18	18	18	18	18
Receiver, Infrared (Stinger)	E1837	$24,068	2	2	2	2	4
Tank, Combat, Full-tracked, 120mm Gun	E1888	$2,393,439	48	48	48	48	84
Test Set, Elect System, Direct Support	E1906	$2,274,000	2	2	2	2	5
Sight, Weapon, Thermal, Medium (MTWS)	E1975	$11,300	1,213	1,213	1,213	1,213	1,444
Sight, Weapon, Thermal, Heavy (HTWS)	E1976	$19,306	974	974	974	974	1,225

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.

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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 2015.

Nomenclature	Equip No.	Average Age	Remarks
Aircraft			
Aircraft, Fighter/Attack, F/A-18A++	F/A-18A++	28	
Aircraft, Refueling/Cargo, KC-130T	KC-130T	25	
Aircraft, Refueling/Cargo, KC-130J	KC-130J	5	
Aircraft, Utility/Cargo, UC-12W	UC-12W	4	
Aircraft, Utility/Cargo, UC-35C	UC-35C	15	
Aircraft, Utility/Cargo, UC-35D	UC-35D	12	
Aircraft, Fighter, F-5F	F-5F	36	
Aircraft, Fighter, F-5N	F-5N	35	
Helicopter, Attack, AH-1W	AH-1W	19	
Helicopter, Cargo, CH-53E	CH-53E	17	
RQ-7B Shadow System	RQ-7B	7	
Communications/Electronics			
High Frequency Vehicle System	A0067	9	
Radio Set	A0153	6	
Support Wide Area Network (SWAN) D V1	A0234	5	
Very Small Aperture Terminal - Medium (VSAT-M)	A0241	5	
SWAN D V3	A0242	5	
SWAN D Network Package	A0243	5	
SWAN D MRT	A0244	5	
Combat Operations Center (COC) V(3)	A0254	6	
Combat Operations Center (COC) V(4)	A0255	6	
Combat Operations Center (COC) V(2)	A0271	5	
Radio Set	A1957	17	
Motor Transport			
Truck, Armored, Cargo, 7-ton, w/Winch Reducible DFCS	D0003	10	
Truck, Armored, XLWB Cargo, 7-ton, w/Winch Non-reducible	D0005	10	
Truck, Armored, Dump, 7-ton, w/Winch Non-reducible	D0007	10	
Truck, Tractor, 7-ton, w/o Winch	D0009	10	
Truck, Armored, Tractor, 7-ton, w/o Winch Non-reducible	D0013	10	
Truck, Armored, Wrecker, 7-ton, w/Winch Reducible	D0015	8	
Truck, Utility, Expanded Capacity, Enhanced, M1152	D0022	7	
Truck, Utility, Expanded Capacity, Armament Carrier	D0030	7	
Truck, Utility, Expanded Capacity, G2/GP Vehicle	D0031	7	
Truck, Utility, ECV, TOW Carrier, Armored	D0032	7	
Truck, Utility, Expanded Capacity, Fully-armored (2-door)	D0033	7	
Truck, Utility, Ground Mobility Vehicle, Armored (4-door)	D0034	7	

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Average Age of Equipment

Table 2

Nomenclature	Equip No.	Average Age	Remarks
Truck, Cargo, 7-ton, w/Winch	D0198	10	
Semitrailer, Refueler, 5000 gal	D0215	6	
Semitrailer, Low-bed, 40-ton	D0235	12	
Trailer, Cargo, Resupply for HIMARS	D0861	10	
Truck Cargo 22.5-ton, 10X10, LVSR	D0886	4	
Truck, Tractor, 10X10, LVSR	D0887	2	
Truck, Ambulance, 4 Litter, Armored, HMMWV	D1001	12	
Truck, Ambulance, 2 Litter, Soft Top, HMMWV	D1002	12	
Truck, RTAA, XLWB Cargo, 7-ton, w/Winch	D1062	10	
HIMARS, Armored Resupply Vehicle, Non-reducible	D1063	6	
Truck, Firefighting, Aircraft and Structure	D1064	26	
Truck, Dump, 7-ton, w/Winch	D1073	10	
Truck, Wrecker, 10X10, LVSR	D1214	2	
Ordnance & Weapons			
Saber System	E0055	4	
Javelin	E0207	4	
Equipment Set, Night Vision	E0330	28	
Howitzer, Lightweight, Towed, 155mm	E0671	6	
Assault Amphibious Vehicle (AAV), Command	E0796	40	
AAV, Personnel	E0846	40	
AAV, Recovery	E0856	40	
Launcher, Rocket, Assault, 83mm	E0915	32	
Launcher, Tubular F/GM TOW Weapon System	E0935	28	
Light Armored Vehicle (LAV), Anti-Tank	E0942	25	
LAV, Command & Control (Battalion)	E0946	27	
LAV, Light Assault, 25mm	E0947	26	
LAV, Logistics	E0948	25	
LAV, Mortar	E0949	26	
LAV, Maintenance/Recovery	E0950	29	
Recovery Vehicle, Full-Tracked, Heavy	E1378	8	
High Mobility Artillery Rocket System (HIMARS)	E1500	6	
Tank, Combat, Full-tracked, 120mm Gun	E1888	17	

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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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Weapons and Combat Vehicles			
Assault Amphibious Vehicle (AAV7A1) Product Improvement Program (PIP)	$356,000	$317,000	$323,000
Light Armored Vehicle (LAV) PIP		1,177,000	1,084,000
155mm Lightweight Towed Howitzer	340,000	12,000	9,000
High Mobility Artillery Rocket System	2,869,000	3,194,000	3,207,000
Weapons and Combat Vehicles under $5M	123,000		
Modification Kits	490,000	498,000	2,511,000
Guided Missiles and Equipment			
Javelin	152,000	166,000	176,000
Anti-Armor Weapons System-Heavy (AAWS-H)	117,000	223,000	213,000
Communications and Electronics Equipment			
Unit Operations Center	1,206,000	2,140,000	1,065,000
Common Aviation Command and Control System (CAC2S)	2,479,000		
Repair and Test Equipment	1,209,000	1,244,000	1,253,000
Items under $5M (Communications & Electronics)	47,000	47,000	46,000
Radar Systems	5,427,000	3,913,000	3,666,000
Fire Support System	1,667,000	2,549,000	2,805,000
Intelligence Support Equipment	825,000		1,019,000
Distributed Common Ground System (DCGS)-Marine Corps		1,540,000	
Common Computer Resources	9,000	10,000	10,000
Command Post Systems	3,071,000	188,000	402,000
Radio Systems	12,583,000	549,000	
Communications Switching & Control Systems	3,117,000	4,212,000	4,503,000
Support Vehicles			
Commercial Cargo Vehicles			8,967,000
Motor Transport Modifications	940,000	748,000	194,000
Family of Tactical Trailers	1,018,000	746,000	666,000
Engineer and Other Equipment			
Environmental Control Equipment	94,000	698,000	1,003,000
Bulk Liquid Equipment	68,000	60,000	83,000
Tactical Fuel Systems	9,000	79,000	1,840,000
Power Equipment Assorted	2,225,000	3,211,000	1,797,000
Amphibious Support Equipment		323,000	275,000
Explosive Ordnance Disposal (EOD) Systems		2,878,000	
Material Handling Equipment		1,512,000	1,359,000
Container Family	720,000	361,000	535,000

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Table 3

Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2016	FY 2017	FY 2018
Family of Construction Equipment	1,819,000	1,364,000	1,282,000
Items less than $5M (Engineer)	208,000	176,000	
Spares and Repair Parts	1,023,000	2,514,000	364,000
Total	**$44,211,000**	**$36,649,000**	**$40,657,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment			
KC-130J Weapons System Trainer	$28,198,000		
KC-130J Cockpit Procedures Trainer	7,078,000		
KC-130T WX Radar Replacement and GPS	12,546,784		
KC-130T Electronic Propeller Control System (EPCS)	4,767,237		
KC-130T Hose Reel Improvements	1,723,008		
KC-130T Tactical Air Navigation (TACAN) Upgrade	453,104		
F-5 Electronic Attack (EA) Digital Radio Frequency Memory (DRFM) Pods	7,986,000		
F-5 Service Life Extension/Vertical Stabilizers (VSTABs)	7,630,000		
Covert Lighting Upgrades for C-12W	1,750,020		
UC-12W Satellite Phones	120,000		
Combat Operations Center Version 2 Upgrades	2,567,550		
Combat Operations Center Version 4 Upgrades	1,231,824		
Indoor Simulated Marksmanship Trainer (ISMT) refresh of hardware systems for Reserves	12,224,300		
AN/TSQ-231A Joint Enhanced Core Communications System (JECCS)	71,987		
Meteorological Mobile Facility (Replacement) [METMF(R)] Weather Forecasting Module	4,000,000		
Battlefield Illumination Chutes	1,570,000		
Tactical Exploitation Group-Remote Workstation (TEG-RWS)	640,000		
MBR II - Multi-Band Radio IMRC-145B	2,665,194		
Data Distribution System Module (DDS-M) Upgrades	1,861,068		
Night Targeting System Upgrade (NTSU)	15,300,000		
NTSU Reliability Kit	2,160,000		
Tactical Video Data Link A Kits	537,570		
Tactical Video Data Link P Kits	1,123,578		
Tactical Video Data Link Installation	810,000		
Request Pending	984,776		
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	
Request Pending		50,690,756	
Total	**$120,000,000**	**$60,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 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 2016 Qty	FY 2017 Qty	FY 2018 Qty	Remarks
Aircraft, Refueling/Cargo, KC-130J	KC-130J		+2	+1	New aircraft deliveries
Tilt-rotor, Cargo, MV-22B	MV-22B	+12			Replacing CH-46Es with MV-22B transfers from AC
Helicopter, Attack, AH-1W	AH-1W		+12		HMLA-775 will stand up in Camp Pendleton
Helicopter, Utility, UH-1Y	UH-1Y	+3	+6		UH-1Ns being replaced with UH-1Ys

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
USMCR indicated no planned transfers or withdrawals in the FY 2012 NGRER.							
FY 2012 P-1R Equipment							
Weapons and Combat Vehicles							
Assault Amphibious Veh (AAV7A1) Product Improvement Program (PIP)				$99,000	$99,000		
Light Armored Vehicle (LAV) PIP				2,953,000	2,953,000		
Guided Missiles and Equipment							
Follow-on to Shoulder-launched Multipurpose Assault Weapon (SMAW)				3,422,000	0		
Communications and Electronics Equipment							
Fire Support System				377,000	377,000		
Engineer and Other Equipment							
Environmental Control Equipment				762,000	762,000		
Container Family				933,000	933,000		
FY 2012 NGREA Equipment[1]							
Flight Training Device, UH-1						$33,000,000	$29,700,000
Flight Training Device, CH-53E						14,000,000	9,874,309
Flight Training Device, MV-22B						12,000,000	10,001,000
KC-130T Digital Engine Indicator Panels						3,928,571	3,928,571
KC-130T Electronic Propeller Control System (EPCS)						2,071,428	2,071,428
RQ-12A Wasp AE Unmanned Aircraft System (UAS) and Initial Spares Packages						0	5,425,690
MV-22 Peculiar Ground Support Equipment and MV-22 Tool Control Kits.						0	2,000,000
Total				**$8,546,000**	**$5,124,000**	**$65,000,000**	**$63,000,999**

1. A decrement of $1,999,000 was applied to USMCR FY 2012 NGREA due to FY 2013 sequestration reduction allocation.

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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 2016 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	21	$74,800,000	$1,570,800,000	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	$39,999,999	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	KC-130J Training Suite	2	1	$47,700,000	$47,700,000	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.
4	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.
5	Enterprise Services Capability (ESC)	1	1	$10,430,806	$10,430,806	Marine Forces Reserve (MFR) received approval to establish a Enterprise Services Capability (ESC) in accordance with the National Defense Authorization Act FY 2012 Section 2867; however, no funding exists in the FYDP for this RC requirement. The ESC will provide the MFR a standardized communication infrastructure for the commander and staff to digitally plan, prepare, and execute operations related to the MFR mission. The ESC will allow MFR to establish a network infrastructure commensurate with AC counterparts. Additionally it will permit MFR to establish the infrastructure necessary to support continuity of operations and disaster recovery.

Chapter 4
United States Navy Reserve

I. Navy Overview

A. Navy Planning Guidance

In an increasingly uncertain world, forward and ready naval forces will continue to be called upon to support our Nation's security objectives from the sea. Safeguarding the oceans that interconnect our world and responding to crises in the littoral regions that dominate worldwide economic activity will remain operations in high global demand. On any given day, over 100 ships and over 48,000 Sailors are deployed around the world to protect our Nation's interests, sustain U.S. leadership, respond to crises, and, when necessary, fight and win. America's Navy is at its best when operating forward. As stated by the Chief of Naval Operations (CNO), "This is our mandate: to be where it matters, when it matters."[1]

The United States Navy maintains, trains, and equips combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas through six enduring functions: forward presence, deterrence, sea control, power projection, maritime security, and humanitarian assistance/disaster response. 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*. Built upon this foundation, 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. The current era of increased fiscal constraint demands a rebalancing in four key areas: rebalancing for a broad spectrum of conflict; rebalancing and sustaining our presence and posture abroad; rebalancing capability, capacity, and readiness; and rebalancing tooth and tail. After evaluating current and projected threats, global presence requirements, and warfighting scenarios, the resulting balanced Navy priorities are:

1. Maintain a credible, modern, and survivable sea-based strategic deterrent.
2. Sustain forward presence, distributed globally in places that count.
3. Preserve the means to win decisively in one multi-phase contingency operation and deny the objectives of another aggressor in a second region.
4. Focus on critical afloat and ashore readiness to ensure the Navy is adequately funded and ready.
5. Enhance the Navy's asymmetric capabilities in the physical domains as well as in cyberspace and the electromagnetic spectrum.
6. Sustain a relevant industrial base, particularly in shipbuilding.[2]

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[1] CNO before the Senate Subcommittee on Defense, Committee on Appropriations, *FY 2015 Department of the Navy Posture*, March 2014.
[2] Ibid.

Facing difficult budget decisions, these priorities guide the rebalanced acquisition and modernization strategy while upholding the CNO's tenets of *Warfighting First, Operate Forward, and Be Ready*.

The United States Navy Reserve provides strategic depth and delivers operational capability to the Navy, Marine Corps, and joint forces through three strategic focus areas: delivering a ready and accessible force, providing valued capabilities, and enabling the service of our Sailors and civilians. More operational than ever before, the Navy Reserve provides essential surge capacity for naval forces and is a key component of the Total Force that fully aligns equipping plans and policies with the CNO's tenets. Investments in required capabilities to include air logistics, tactical strike-fighter support, mobile construction, coastal riverine, and special warfare serve as cost-effective force multipliers that support joint force requirements, and prioritize *Warfighting First*.

> Today's Navy Reserve serves as a hedge against uncertainty by providing agility, capability and capacity to the Total Force—delivering ready and capable Sailors where it matters, when it matters. The Navy relies on its Reserve Component as a dependable source of strength to mitigate risk and offset cost whether augmenting warfighting requirements overseas, supporting major contingencies at home, or providing enduring core capabilities. We will continue to evaluate integration of effort, and the balance of roles and responsibilities between Active and Reserve Components as the Navy rebalances toward the Asia-Pacific.[3]

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 with the goal of improving output over cost. 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 is not just a concept. It is an operational and organizational reality, and equipment allocation follows that same construct. The Navy executes operational missions through the AC and its equipment, the RC and its equipment, or a combination of both. AC and RC Sailors operate interchangeably in many capability areas. Their equipment often follows suit.

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[3] Chief of Navy Reserve (CNR) before the Senate Subcommittee on Defense, Committee on Appropriations, *FY 2015 Department of the Navy Posture,* March 2014.

Major operational and contingency plans require RC units to deploy as integrated parts of Navy's warfighting plan. Navy component commanders identify equipment requirements 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

The Navy has multiple ongoing initiatives to modernize and improve RC operational capabilities. Significant examples follow.

- **C-40A Clipper**: The last Navy C-9B was retired from the inventory on June 30, 2014. The C-40A is a replacement for the 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, 13 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. Two additional aircraft are under contract with estimated deliveries in late FY 2015 and early FY 2017, bringing the total inventory to 15 aircraft. DOD 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-18A+ Hornet**: The Navy Reserve operates 22 legacy F/A-18A+ aircraft divided between two squadrons that execute greater than 25 percent of the Navy's total adversary support missions to train fleet naval aviators. These aging aircraft (average age is 28 years) are 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 provide adversary support with aircraft that are less able to simulate current threat aircraft. As Naval Aviation prepares for future adversaries, the Navy Reserve's Hornets will need to be recapitalized to provide realistic threat-representative training. In addition to training fleet naval aviators, these two squadrons provide a critical strategic reserve capability to support Global Force Management Allocation Plan (GFMAP) requirements. Due to the aging airframes, these two squadrons are in need of recapitalization with F/A-18E Super Hornets to provide the most interoperable strategic reserve capability and offer realistic adversary support to train fleet naval aviators.

- **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, Navy air-to-air tactics have advanced at such a pace that the F-5 is currently unable to simulate many 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 relatively low-cost options to aid in solving these deficiencies.

- **EA-18G Growler**: Based on the congressional mandate to continue supporting expeditionary Airborne Electronic Attack (AEA) missions, the Navy recapitalized the RC EA-6B Prowlers with five EA-18G aircraft. Additionally, VAQ-209 was relocated from Joint Base (JB) Andrews, MD, to Naval Air Station (NAS) Whidbey Island, Washington, to capitalize on operational, logistical, and fiscal benefits through co-location with the Navy's AEA community. The squadron is training with the EA-18G aircraft and will be ready for operational tasking in mid-FY 2015.

- **P-8A**: Advancing structural fatigue across the Maritime Patrol and Reconnaissance P-3C aircraft inventory continues to be an issue. Due to a fleet-wide shortage of P-3C aircraft, AC utilization of RC aircraft has become a necessity. Utilization of RC aircraft has been fully incorporated into AC training and readiness, forward-deployment, and P-3C sustainment/sundown plans. There are currently no plans to extend the P-3C service life (RC aircraft included) or maintain P-3C maintenance support capabilities beyond the P-8A full operational capability in FY 2021. If the RC is to retain Maritime Patrol and Reconnaissance capability, RC patrol squadrons must be recapitalized with the P-8A aircraft.

- **C-130T**: The current C-130T aircraft are a crucial part of Navy Unique Fleet Essential Airlift requirements. They serve as a connector between strategic airlift points and provide global logistics support while specializing in providing airlift for outsized cargo. While other Services are replacing their legacy C-130 aircraft with the new KC-130J, Navy has extended

the life of the C-130T through an innovative Aircraft Obsolescence Upgrade. This upgrade will enable Navy's C-130 to continue supporting fleet requirements. However, with some of the highest-hour C-130s in DOD, a recapitalization effort must be started to ensure no loss of warfighting logistics support capability.

- **Coastal Riverine Force (CRF)**: In FY 2014, the CRF assumed the high-value unit escort mission from the Coast Guard in Groton, Connecticut. 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.

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. Due to these 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.

Several recent NGREA funded initiatives have greatly improved AC/RC compatibility. For example, the Multifunctional Information Distribution System Link-16 style data link for RC F/A-18A+ enabled a common fleet configuration that enhanced interoperability, provided advanced threat replication, and improved safety for midair collision avoidance. The CRF initiatives, including the Tactical Operations Center and Radar Surveillance Center, provided a full range of communication and sensor systems now aligned with their AC expeditionary counterparts. The Navy must have interoperability between all elements of the Total Force to ensure an effective team. Equipment acquisition and upgrade programs such as these have helped close the compatibility and capability gaps among AC, RC, and joint forces and will continue to remain a top priority for the Navy Reserve. The current force structure, platforms, systems, and equipment are being continually assessed to ensure sufficient readiness and warfighting capabilities are met.

II. Navy Reserve Overview

A. Current Status of the Navy Reserve

1. General Overview

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])

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.

> Reserve Sailors are deployed in every theater supporting the ability to deter, influence, and win during this era of uncertainty. Since September 11th 2001, the Navy Reserve has completed 70,060 mobilizations in support of contingency operations around the world. As U.S. force levels adjust in Afghanistan, the RC will mobilize to fill most of the remaining Individual Augmentee (IA) requirements, allowing AC Sailors to fill critical sea billets. In FY 2014, an estimated 2,650 Reserve Sailors will be mobilized to support 81 percent of the Total Force IA commitment. On any given day, approximately 25 percent of Sailors serving in the Navy Reserve are providing operational support to AC commands. The Reserve force remains flexible, responsive, and innovative—attributes that will continue to provide a solid foundation for the Navy's focus on putting *Warfighting First*.[4]

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 the Navy Reserve in her testimony before the Senate Subcommittee on Defense,

> In FY 2013, Navy Unique Fleet Essential Airlift (NUFEA) transported 23 million pounds of cargo and 118,000 personnel resulting in an estimated cost avoidance of $900 million compared to alternative DOD or commercial options. The C-40A Clipper cargo and passenger aircraft showcased its capabilities by executing the first Littoral Combat Ship (LCS) "crew swap" mission, traveling over 8,000 miles in 25 hours to transport 76 USS FREEDOM (LCS-1) Core and Surface Warfare Mission Module crew members to Singapore. Additionally, Navy C-40A crews delivered a load of time-sensitive, safe-for-flight replacement components for grounded Navy and Marine Corps F/A-18 Hornets in USCENTCOM within 72 hours of the grounding, minimizing the operational impact.[5]

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. Many others provide their expertise on a "part-time" basis as Selected Reservists (SELRES) partcipating through Inactive Duty Training, Annual Training, or Active Duty for Training. This ready and accessible force provides required capabilities and is ideally suited to take on periodic and predictable work. Furthermore, in the case of SELRES Sailors, when their work is complete they return to their civilian careers and leave the Navy payroll. Navy Reserve

[4] Ibid.
[5] Ibid.

Sailors are both a highly-skilled and cost-effective workforce and are relied upon as a dependable source of strength to mitigate risk and offset cost. Whether augmenting warfighting requirements overseas or supporting major contingencies at home, today's Navy Reserve delivers ready capabilities where it matters, when it matters.

The Navy Reserve is fully engaged across the full spectrum of Navy, Marine Corps, and joint force operations. While mobilizations continue to fill contingency requirements, the Navy Reserve increasingly provides needed capabilities for urgent missions and operational support.

- In 2014, four Reserve fighter squadrons provided over 80 percent of the Navy's dedicated 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.
- The skilled shipyard engineer and technician workforce of Navy Reserve Surge Maintenance provided over 16,500 man-days for depot level repair of ships and submarines with potential cost avoidance of over $4M for Naval Sea Systems Command.
- Reserve pilots comprising only 13 percent of instructors in the Naval Air Training Command flew over 20 percent of the total instructional flight hours.
- The Navy leveraged the Navy Expeditionary Combat Command (NECC) Reserve CRF to assume the high-value unit mission from the Coast Guard and provided essential protection for vessels transiting in and out of port, a critical mission expected to expand in the future.

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 legacy C-9B and C-20G aircraft. This aircraft 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. The 13 C-40As operate out of VR-56 at NAS Oceana, Virginia; VR-57 at NAS North Island, California; VR-58 at NAS Jacksonville, Florida; and VR-59 at NAS Joint Reserve Base (JRB) Fort Worth, Texas. Additionally, VR-61 at NAS Whidbey Island, Washington, will transition to the C-40A in FY 2015.

The recent transfer of five C-130T aircraft from the Marine Corps brought FLSW to the number of aircraft to satisfy the established minimum inventory requirement. Because of its versatile capability, the C-130T remains the most requested airlift asset in the Navy Reserve fleet. The current C-130T inventory consists of 24 aircraft operated out of VR-53 at 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. However, the C-130Ts are not uniformly configured and the local training sites have dissimilar

training devices. Nineteen aircraft are configured with compliant avionics but the five recently transferred aircraft require updates to satisfy cockpit standardization and Communications, Navigation, Surveillance and Air Traffic Management compliance. The Navy C-130 fleet's long-term capability will be limited due to the lack of a certified Global Positioning System and enhanced altitude reporting capability. These aircraft systems continue to face resourcing challenges relative to other Navy priorities, which threaten future compliance with international flight standards. In the near term, mission sustainment will be accomplished with the current C-130T inventory. However, the KC-130J offers twice the "Ready for Tasking" days as the C-130T and is the best long-term sustainment option for the fleet.

The Service Secretaries have designated the C-20D and the C-37A/B aircraft for transportation of 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 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, the EA-18G squadron, flew the EA-6B until FY 2013 when the Navy relocated the squadron to NAS Whidbey Island, Washington, from Joint Base Andrews, Maryland, and recapitalized it with five EA-18G aircraft. This move provided additional training, operational, logistical, and fiscal benefits through co-location with the Navy's AEA community. The squadron was certified "Safe for Flight" in May 2014 and continues to train to meet "Ready for Tasking" requirements by mid-2015. The EA-18G provides full-spectrum AEA to counter enemy air defenses and communication networks, including the employment of anti-radiation missiles.

The two Reserve F/A-18A+ squadrons, VFA-204 at NAS JRB New Orleans, Louisiana, and VFC-12 at NAS Oceana, Virginia, are the Navy's only dedicated advanced adversary squadrons. Additionally, they provide a critical strategic reserve capability through their ability to augment the carrier air wing on deployments. Due to their age and material condition, the Navy is exploring options for recapitalizing the legacy RC Hornet squadrons with newer platforms. The F/A-18E and Joint Strike Fighter would provide sustainable platforms to meet the Navy's vision of future warfare capabilities. The high operational tempo of the last decade has accelerated the aging of the Navy tactical aircraft inventory and has led to an increased dependence on RC F/A-18 aircraft to meet fleet requirements.

The 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 delivery of the EA-18G and the impending F-35 requirements. While adversary aviation 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.

c. Maritime Patrol and Reconnaissance Aircraft (MPRA)

The RC operates two 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 (ASW), humanitarian assistance/disaster relief support, homeland defense contingency operations, fleet and North Atlantic Treaty Organization exercise support, and the combating of transnational organized crime operations. RC squadrons support the CNO's Fleet Response Plan by continuously providing six combat-ready aircrews for worldwide surge. 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 critical missions including dedicated rotary-wing support to special operations forces (SOF), search and rescue, antisubmarine warfare, antisurface warfare, maritime intercept operations, airborne mine countermeasures, and counter-illicit trafficking operations. The RC provides three helicopter squadrons to the Navy's rotary-wing fleet which includes HSL-60 at NAS Mayport, Florida; HSC-84 at NAS Norfolk, Virginia; and HSC-85 at NAS North Island, California. The squadrons are operationally integrated into the Active wings for routine tasking and surge support. HSC-84 and HSC-85, operating HH-60H aircraft, currently provide the Navy's only dedicated Navy Special Warfare (NSW) SOF support and are scheduled to be decommissioned in 2016. In 2014, personnel from HSC-84 were mobilized and deployed to the United States Central Command (USCENTCOM) area of responsibility (AOR) supporting special operations, psychological operations, and medical and casualty evacuations. HSC-85 participated in several Joint Combined Exercise Training periods in the United States Pacific Command (USPACOM) AOR throughout 2014. Both squadrons are filling joint force requirements in the USCENTCOM and USPACOM AORs and provide over 25 percent of the rotary-wing support to special operations. HSL-60 is tasked with various fleet requirements including antisubmarine warfare, antisurface warfare, and counter-illicit trafficking operations, deploying aboard surface combatants in the United States Southern Command and USCENTCOM AORs. Additionally, HSL-60 serves as the Navy's only Night Airborne Use of Force capability for counter-illicit trafficking operations. They will begin their transition from the SH-60B to the MH-60R helicopter during FY 2015.

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 37 percent of the Navy's total AMCM capability.

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 2,300 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 of squadrons with MK VI Patrol Boats and Riverine Command Boats.

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 Dallas, Texas; NMCB 25 at Fort McCoy, Wisconsin; and NMCB 27 at Westover, Massachusetts. The RC NCF is comprised of 4,400 Reserve Sailors.

Although the 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 rotation with AC in support of missions in the USCENTCOM and United States Africa Command AORs. However, funding is still required to upgrade command, control, communications, computer, and information equipment and tactical data networks and to procure Synthetic Weapons Training simulators.

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 provides support to the NAVELSG through three Navy Expeditionary Logistics Regiments (NELR) and six Navy Cargo Handling Battalions (NCHB). The three NELRs are located at Cheatham Annex in Williamsburg, Virginia (2nd NELR); Blount Island Marine Corps Base, Jacksonville, Florida (4th NELR); and NAS Point Mugu, California (5th NELR). The six NCHBs are located at NAS Whidbey Island, Washington (NCHB 5); Lakehurst, New Jersey (NCHB 8); Yorktown, Virginia (NCHB 10); Blount Island Marine Corps Base ,Jacksonville, Florida (NCHB 11); Gulfport, Mississippi (NCHB 13); and Port Hueneme, California (NCHB 14). The Navy Reserve makes up 95 percent of NAVELSG and is comprised of 2,100 Reserve Sailors.

Funding is required to enhance NAVELSG mission readiness with a C-5/C-17 loading simulator, additional construction equipment, tactical vehicles, containers, and various additional required Table of Allowance items.

h. Expeditionary Combat Camera (EXPCOMBATCAM)

EXPCOMBATCAM is 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 and provides the only Navy subsurface documentation capability. EXPCOMBATCAM consists of one 50 Reserve Sailor detachment at Naval Base Norfolk, Virginia.

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 forces and joint forces timely, actionable intelligence. NEIC includes 150 Reserve personnel and operates out of Dam Neck Annex in Virginia Beach, Virginia.

j. Surface Warfare Enterprise (SWE)

The Surface Warfare Enterprise is supported by approximately 2,500 Sailors 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 maintain assigned SELRES personnel and equipment in an optimized state of readiness to support LCS mission requirements. The Navy will fund over 1,000 billets for 20 LCS units by FY 2019. LCS units will augment the LCS squadron staffs, seaframe maintenance, shipboard antiterrorism/force protection watches, and Mission Module support. Maintenance is the chief focus area of the RC effort, constituting 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 train 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)

The NSW RC is organized around NSW Group 11 which is comprised of Reserve SEAL Teams 17 and 18, 15 RC operational support units, and 15 NSW detachments and is supported by 1,000 RC Sailors. They are charged with deploying forces worldwide in support of NSW and joint SOF requirements. Approximately seven percent of 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.

l. Military Sealift Command (MSC)

MSC, which is part of the United States Transportation Command, is the transportation provider for the DOD with the responsibility of providing worldwide strategic sealift and ocean transportation for all military forces. Nearly 900 Reserve Sailors are assigned to 40 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 United States Transportation Command forces and MSC forces not otherwise assigned to the numbered fleet

commanders. When mobilized, RC units take charge of establishing MSC port offices to assist with sealift operations where and when needed. 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 submarine force RC'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 ASW operations both ashore and at sea. Expeditionary maintenance RC Sailors augment submarine tender crews to provide maintenance support to deployed submarines. They also deploy to Diego Garcia and Guam to augment guided-missile submarine crews during forward-deployed maintenance periods. RC Sailors also provide force protection to high-value units 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. Many RC Sailors who support SPAWAR leverage advanced technical degrees and extensive technical experience.

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 focus on various unmanned aircraft systems has 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 personnel.

p. Information Dominance Corps

The Information Dominance Corps 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.

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. 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 (DON) public affairs. The CHINFO/DON public affairs mission is to provide strategic counsel, contribute to operational planning, and execute communication activities in support of national objectives, joint combat operations, and the 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 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 Reserve unit, which is currently funded to 1,500 Reserve billets and scheduled to grow to 2,100 billets by 2020.

t. Naval Explosive Ordinance Disposal Technology Division (NAVEODTECHDIV)

RC NAVEODTECHDIV unit'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 both DOD and other government agencies. The RC NAVEODTECHDIV unit 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 of increasingly older equipment, particularly RC aircraft, we find ourselves in the position of soon needing to recapitalize and/or modernize some of our most expensive assets. Of particular concern are P-3C aircraft (32 years old) and F/A-18A+ aircraft (28 years old) that operate at a significantly higher cost, produce lower ready for tasking 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 the Navy Reserve's top equipment priorities. While procurement and upgrade programs as well as Congressional adds have improved RC equipment capability and compatibility, challenges remain. For instance, as is noted in our *Table 8 Significant Major Item Shortages*, recapitalization of our F/A-18A+ and P-3Cs remains critical for these squadrons to seamlessly operate with the fleet and remain relevant. 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. For instance, due to sequestration, depot level maintenance on RC aircraft and aircraft engines was deferred from FY 2014 to FY 2015 and will potentially impact FY 2016 mission readiness. The high operations tempo for the Navy Reserve has accelerated equipment degradation and service-life expenditure. Potential 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. Periodically, the CNO develops an Unfunded Priority List (UPL) and forwards it to Congress for resourcing consideration. In the FY 2015 UPL to Congress, the CNO requested two C-40As for Navy. In addition to those 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 2015 NGRER:

- HSC-84 and HSC-85 are scheduled for FY 2016 decommissioning, which will include the reduction of 24 HH-60H helicopters from the RC inventory.
- Navy recapitalized the six RC EA–6Bs with five EA-18Gs and relocated VAQ-209 from JB Andrews, Maryland, to NAS Whidbey Island, Washington.
- Navy accepted the transfer of five C-130Ts from the Marine Corps, bringing current RC inventory to the number of aircraft to satisfy the established minimum inventory requirement of 24 aircraft.
- 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.
- F/A-18A+ RC inventory increased from 20 to 22 aircraft to meet operational wartime requirements.

C. Future Years Program (FY 2016–FY 2018)

1. FY 2018 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2016–FY 2018 major equipment inventories and requirements.

2. Anticipated New Equipment Procurements

In FY 2013 and FY 2014, significant NGREA funding was provided to CRF to procure MK VI Patrol Boats and communications equipment. 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 2018

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

In summary, the Navy continues to integrate its Reserve and Active Components into a cohesive Total Force ready to meet all operational requirements. The *CNO's Navigation Plan 2015–2019* explains how the current fiscal climate compelled the Navy to make tough choices across a wide range of competing priorities in the coming budget years. The Navy focused first on building appropriate capability, then delivering it at a capacity it could afford. The CNO has asserted that the Navy will do its part to "put its fiscal house in order," but will do so in a responsible way, balancing current readiness with the need to build a highly capable future fleet.

Procurement of modern equipment across all RC communities is essential to ensuring compatibility and interoperability with the AC. 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 with Active forces as well as the ability to meet operational demands. Additionally, as the Navy continues to develop unmanned aircraft systems, Navy Reserve participation in those programs will grow.

Today's Navy Reserve continues to provide vital strategic depth and operational capabilities to the Navy and Nation. 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, cargo afloat rigging teams, cargo handling battalions, and rotary-wing support to special operations forces. Whether providing strategic depth or unique operational support, NGREA remains essential to allowing the Navy Reserve to meet both its readiness and warfighting commitments.

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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 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Aircraft							
Aircraft, Transport, C-40A (Boeing 737-700)	C-40A	$84,500,000	14	14	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	2	2	2	2	2
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	22	22	22	22	22
Aircraft, Fighter, F-5F (Freedom Fighter)	F-5F	$15,231,060	2	2	2	2	2
Aircraft, Fighter, F-5N (Freedom Fighter)	F-5N	$740,025	30	30	30	30	30
Helicopter, Combat SAR, HH-60H (Seahawk)	HH-60H	$15,564,330	24	0	0	0	0
Helicopter, Mine Warfare, MH-53E (Sea Dragon)	MH-53E	$22,518,495	7	7	7	7	7
Helicopter, ASW, MH-60R (Seahawk)	MH-60R	$25,000,000	5	7	7	7	7
Aviation Simulators							
C-130T Simulator	C-130T SIM	$23,500,000	3	3	3	3	3
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
Reserve Naval Construction Force (NCF)							
Construction Battalion Maintenance Unit TOA	P05	$15,199,337	2	2	2	2	2
Naval Mobile Construction Battalion TOA	P25	$67,965,099	5	5	5	5	5
Naval Mobile Construction Battalion Personal Gear Issue (PGI) TOA	P25PGIRC	$5,969,367	5	5	5	5	5
Naval Construction Regiment TOA	P29	$11,748,635	2	2	2	2	2
Naval Construction Regiment PGI TOA	P29PGIRC	$861,847	2	2	2	2	2
Naval Construction Division TOA	P30	$855,657	1	1	1	1	1
Construction Capability Augment TOA	P32	$133,479,019	1	1	1	1	1
NCF Training Allowance TOA	P47	$23,007,215	1	1	1	1	1
EXPCOMBATCAM TOA Equipment	EO9	$2,937,946	1	1	1	1	1

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Coastal Riverine Force (CRF)							
Squadron Headquarters TOA Equipment Squadron Companies A, B, C, D TOA Equipment	B01SQDHQ B01AA011 B01AB011 B01AC011	$63,356,760	4	4	4	4	4
MK VI Patrol Boat	MKVIPB	$16,000,000	0	0	3	4	4
Mobile Ashore Support Terminal	B01S02 MAST	$3,106,533	4	4	4	4	4
Radar Sonar Surveillance Central	B01S02 RSS1	$2,761,162	8	8	8	8	8
Navy Expeditionary Logistics Support Group							
Navy Expeditionary Logistics Regiment Staff TOA	F01NL RSTF	$1,527,284	2	2	2	2	2
Expeditionary Communications Detachment TOA	F01ECD	$1,084,760	3	3	3	3	3
Navy Cargo Handling Battalion TOA	F01NCHB	$30,313,916	3	3	3	3	3
Navy Expeditionary Intelligence Command (NEIC)							
Intelligence Exploitation Team TOA Equipment	G11IET	$1,043,276	6	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 2015.

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	20	Five older model USMC KTs recently transferred
Aircraft, Transport, C-20D (Gulfstream)	C-20D	27	
Aircraft, Transport, C-20G (Gulfstream)	C-20G	20	
Aircraft, Transport, C-37A (Gulfstream)	C-37A	12	
Aircraft, Transport, C-37B (Gulfstream)	C-37B	8	
Aircraft, Patrol, P-3C (Orion)	P-3C	32	
Aircraft, Electronic Attack, EA-18G (Growler)	EA-18G	5	
Aircraft, Fighter/Attack, F/A-18A+ (Hornet)	F/A-18A+	28	
Aircraft, Fighter, F-5F (Tiger II)	F-5F	18	
Aircraft, Fighter, F-5N (Tiger II)	F-5N	35	
Helicopter, Combat SAR, HH-60H (Seahawk)	HH-60H	22	
Helicopter, Mine Warfare, MH-53E (Sea Dragon)	MH-53E	21	
Aviation Simulators			
C-130T Simulator	C-130T SIM	29	Average age of all four simulators
F-5 Simulator	2F213	6	Average age of two simulators
FA-18C Simulator	2F193A	6	Average age of two simulators
Naval Beach Group			
Maritime Prepositioning Force Utility Boat	MPF-UB	5	
Naval Beach Group Table of Allowance (TOA)	NBG	1	Average age of major equipment in TOA, procure in FY 2015
Reserve Naval Construction Force (NCF)			
Construction Battalion Maintenance Unit TOA	P05	16	Average age of major equipment in TOA
Naval Mobile Construction Battalion (NMCB) TOA	P25	10	Average age of major equipment in TOA
Naval Mobile Construction Battalion Personal Gear Issue (PGI) TOA	P25PGIRC	1	Average age of major equipment in TOA, procure in FY 2016
Naval Construction Regiment (NCR) TOA	P29	8	Average age of major equipment in TOA
Naval Construction Regiment PGI TOA	P29PGIRC	1	Average age of major equipment in TOA, procure in FY 2016
Naval Construction Division TOA	P30	1	Average age of major equipment in TOA, procure in FY 2016
Construction Capability Augment TOA	P32	14	Average age of major equipment in TOA
NCF Training Allowance TOA	P47	8	Average age of major equipment in TOA
EXPCOMBATCAM TOA Equipment	EO9	4	Average age of major equipment in TOA
Coastal Riverine Force (CRF)			
Squadron Headquarters TOA Equipment Squadron Companies (A, B, C, D)	B01SQDHQ B01AA011 B01AB011 B01AC011	8	Average age of major equipment in TOA
Mobile Ashore Support Terminal	B01S02MAST	9	

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Table 2

Average Age of Equipment

Nomenclature	Equip No.	Average Age	Remarks
Radar Sonar Surveillance Central	B01S02RSS1	9	
Navy Expeditionary Logistics Support Group (NAVELSG)			
Navy Expeditionary Logistics Regiment Staff TOA	F01NLRSTF	6	Average age of major equipment in TOA
Expeditionary Communications Detachment TOA	F01ECD	4	Average age of major equipment in TOA
Navy Cargo Handling Battalion TOA	F01NCHB	6	Average age of major equipment in TOA
Navy Expeditionary Intelligence Command (NEIC)			
Intelligence Exploitation Team TOA Equipment	G11IET	4	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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Other Aircraft			
KC-130J	$216,665,000	$162,843,000	$172,646,000
Modification of Aircraft			
Adversary Aircraft	5,816,000	1,417,000	639,000
H-53 Series	8,163,000	2,879,000	4,741,000
C-130 Series	22,307,000	20,944,000	20,293,000
Cargo/Transport Aircraft (A/C) Series	8,916,000	15,234,000	12,045,000
Other Procurement			
Standard Boats	59,000	2,122,000	1,123,000
Construction & Maintenance Equipment		317,000	326,000
Tactical Vehicles		4,216,000	19,640,000
Items Under $5M - Civil Engineering Support Equipment	1,241,000	681,000	2,763,000
Materials Handling Equipment		1,209,000	6,862,000
C4ISR Equipment	1,864,000	1,823,000	1,864,000
Physical Security Equipment	1,293,000	3,828,000	5,318,000
Total	**$266,324,000**	**$217,513,000**	**$248,260,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment			
Coastal Riverine Force (CRF) MK VI Patrol Boat	$30,000,000		
CRF Reserve Squadron Navy Expeditionary Combat Command (NECC) Enterprise Tactical Command and Control (NETC2) Communications Equipment	8,800,000		
CRF Reserve Squadron Radar Sonar Surveillance Center (RSSC) Convergence Modernization	3,600,000		
F-5 Sustainment	5,460,000		
F-5 Terrain Avoidance Warning System (TAWS)/Traffic Collision Avoidance System (TCAS) Initiative	1,015,118		
F/A-18+ Multifunctional Information Distribution System (MIDS), Low Volume Terminal (LVT)	18,000,000		
F/A-18A+ Joint Helmet-mounted Cueing System (JHMCS)	4,900,000		
F/A-18A+ Electronic Attack (EA) Pod Upgrade	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		
Naval Special Warfare (NSW) Specialized Weapons	2,720,500	.	
NSW Deployment Operating Stocks	642,818		
C-130T Engine Instrument Display System (EIDS) & Electronic Propeller Control System (EPCS) Kits	1,403,913		
C-130T Annunciator Light Panel Spacer	300,000		
C-130T Electronic Takeoff and Landing Data (eTold) Cruise Management Data Program	100,000		
C-40A Winglets	1,580,000		
C-40A Flight Management Computer (FMC) Fleet Standardization	200,000		
Crew-served Weapons Training System	2,103,000		
Small Arms Weapons Training System	1,402,000		
Combatant Craft Forward Looking Infrared (CCFLIR) sensor	1,101,000		
Portable Environment Protection Equipment	1,975,000		
Submarine Force Protection Detachment Standard Mission Equipment	616,000		
Network Fly Away Team Support Package (NFATSP)	364,480		
Electronic Flight Bags	300,579		
Public Affairs Deployable Multimedia Kit	192,790		
FY 2014 NGREA Equipment			
Coastal Riverine Force (CRF) MK VI Patrol Boat (2)		$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	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
NSW Command, Control, Communications, Computers, and Intelligence (C4I)		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	
Total	**$90,000,000**	**$65,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 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 2016 Qty	FY 2017 Qty	FY 2018 Qty	Remarks
Helicopter, ASW, MH-60R (Seahawk)	MH-60R	+2			Helicopter Antisubmarine Squadron Light (HSL)-60 transitioning to MH-60R helicopter
Helicopter, Combat SAR, HH-60H (Seahawk)	HH-60H	-24			Decommissioned Helicopter Sea Combat Squadron (HSC)-84 & HSC-85

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
Aircraft, Transport, C-20G	C-20G	-1	0				
Helicopter, Combat SAR, HH-60H	HH-60H	+1	+7				
Helicopter, Combat, MH-60S	MH-60S	-5	-5				
Frigate, Guided Missile (Perry Class) Flight III	FFG	-1	0				
Landing Craft, Mechanized, Mark 8	LCM-8	-4	-4				
FY 2012 P-1R Equipment							
Aircraft							
KC-130J				$87,288,000	$87,288,000		
Modification of Aircraft							
H-53 Series				16,301,000	16,301,000		
C-130 Series				19,027,000	19,027,000		
Cargo/Transport A/C Series				42,343,000	31,801,000		
Other Procurement							
Standard Boats				14,810,000	1,081,000		
Passenger Carrying Vehicles				491,000	0		
Construction & Maintenance Equipment				478,000	3,642,000		
Tactical Vehicles				9,426,000	5,330,000		
Items Under $5M (Civil Engineering Support Equipment)				821,000	1,631,000		
Materials Handling Equipment				1,049,000	32,000		
C4ISR Equipment				136,000	136,000		
Physical Security Equipment				2,000,000	2,000,000		
FY 2012 NGREA Equipment							
C-40A Aircraft						$73,900,000	$72,500,000
Naval Special Warfare (NSW) Weapons						800,000	1,728,000
NSW Mission Tasking Communication Equipment						300,000	772,000
Total				**$194,170,000**	**$168,269,000**	**$75,000,000**	**$75,000,000**

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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 2016 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	$84,500,000	$169,000,000	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	Coastal Riverine Force (CRF) MK VI Patrol Boat & Riverine Command Boat	16	12	various	$120,400,000	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.
5	MQ-21A Unmanned Aircraft System (UAS)	3	3	11,500,000	$34,500,000	In support of Special Operations Command's Global Special Operations Forces (SOF) Campaign Plan 2020, Naval Special Warfare (NSW) is expanding UAS capability and capacity globally. Due to capacity constraints of the Active Component and availability of UAS-qualified Navy Reservists, NSW is shifting mission sets for the NSW RC to source Small Tactical UAS (STUAS) deployment requirements globally.
6	RC Coastal Riverine Squadrons (CRS) Tactical Sensor and Command & Control System	various	various	various	$24,139,000	RC CRS Combatant Craft Forward Looking Infrared (CCFLIR) sensor, Communications on the Move (COTM), and CRF Squadron Tactical Command and Control (NETC2) systems. CRF security mission has increased to include HVU escort duties. Current outfitting of the CCFLIR for the 34-ft Patrol Boat conducting the HVU mission is inadequate to support current level of effort. CRF Boats also require satellite communications paths to support intelligence mission sets for pushing products on and off platforms.

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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	Naval Construction Force Satellite Communications (SATCOM) and Tactical Data Network Modernization	7	7	$2,200,000	$15,400,000	Rugged, Deployable SATCOM Terminal (RDSAT) / Tactical Data Network (TDN) modernization for Naval Construction Groups and Reserve Training Platforms (RTP). Funding required to upgrade Navy Expeditionary Combat Command (NECC) Enterprise Tactical Command and Control (NETC2) systems in support of Naval Mobile Construction Battalion (NMCB) deployable units, Naval Construction Regiments (NCRs), and upgrade networks in support of the RTP drill sites with communications equipment.
8	Navy Expeditionary Logistics Support Group (NAVELSG) Table of Allowance (TOA) Equipment	various	various	various	$12,225,000	Funds modernization of command, control, communications, computer, and information (C4I) systems in support of tasked operational missions including overseas contingency and humanitarian assistance/disaster relief operations. Funds remaining shortfalls of tactical vehicles and equipment required to support core mission requirements.
9	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.
10	F-5N	7	7	$600,000	$4,200,000	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.

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

The United States Air Force consists of an exceptional team of innovative Airmen who provide responsive and effective *Global Vigilance, Global Reach, Global Power* through five core missions: 1) air and space superiority; 2) intelligence, surveillance, and reconnaissance (ISR); 3) rapid global mobility; 4) global strike; and 5) command and control. The effects Airmen create through these enduring core missions support the objectives presented in the 2014 Quadrennial Defense Review (QDR) and are essential for successful joint operations. Today's strategic environment is characterized by an increasingly complex set of challenges, and fiscal limitations which require the Air Force to reassess its capabilities and capacity to pursue the 2014 QDR objectives. 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 July of 2014, the Secretary of the Air Force (SECAF) and Chief of Staff of the Air Force (CSAF) unveiled a strategy, *America's Air Force: A Call to the Future*, providing a general path for the Air Force to follow in order to meet the needs of the Nation over the next 30 years. In the long-term strategy, 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. *A Call to the Future* describes the following five strategic vectors in order to direct investments, institutional changes, and employment concepts, and to emphasize the need for agility: 1) Provide effective 21st century deterrence; 2) Maintain a robust and flexible global integrated ISR capability; 3) Ensure a full-spectrum capable, high-end focused force; 4) Pursue a multi-domain approach to our five core missions; and 5) Continue the pursuit of game-changing technologies. The aforementioned vectors will guide Air Force human capital management, science and technology, acquisition, and requirements disciplines toward the most beneficial capabilities.

As the Air Force moves forward and continues to shrink in size, senior leaders foresee a more inclusive organization which exercises greater reliance on the ANG and AFR. 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 plan to have 80 percent of the evaluation concluded by the end of 2014. To be effective, the Air Force must be deliberately planned for and appropriately and consistently funded. Acquisition and

modernization decisions reflect the Air Force's preference for a smaller more ready Air Force which leverages the ANG and AFR.

B. Air Force Equipping Policy

The threats and challenges we face shape national guidance which informed the QDR. 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) 2015 budget proposal with respect to force structure (capacity), readiness, and modernization (capability). In spite of the challenge, the AC and RC 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

As the Air Force seeks the proper balance between readiness of today and modernization in order to field a full-spectrum capable, high-end focused force of the future, increased incorporation of the RC provides 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 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 in the future.

D. Initiatives Affecting RC Equipment

In April of 2014, the SECAF and CSAF presented the Air Force Posture Statement, including the Air Force FY 2015 budget request, to Congress. The budget request reflects a strategy informed flight path to building the most capable and affordable Air Force that can succeed against high-end threats. This includes development and retention of capabilities necessary for the Nation and within the existing fiscal constraints. In order 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. According to Air Force leadership, the force of the future

will be a smaller but very capable force, and this led to tough major decisions in the FY 2015 budget request.

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. The 2015 President's Budget preserves top recapitalization programs (KC-46A, F-35A, Long Range Strike-Bomber [LRS-B]) and protects investments in Primary Fighter Trainer (T-S) and the next generation of Space Based Systems (Advanced Extremely High Frequency, Space Fence, Weather System Follow-on). The budget request reflects the decision to divest a portion of combat and combat support aircraft. However, to maintain capacity some aircraft will transfer to the ANG and AFR in order to maintain flying missions impacted by fleet divestitures. Correspondingly, the request proposes reducing military end strength by 20,400 in FY 2015, with a total reduction of nearly 24,000 by FY 2019. Of the 24,000 reduction, 20,000 will come from the AC, 1,000 from the ANG, and 3,000 from the AFR. Savings projected as a result of the proposed end strength reductions total $29.1B in FY 2015.

For FY 2015, the President's Budget proposes an Administration-wide initiative known as the Opportunity, Growth, and Security Initiative. For the Air Force, the Opportunity, Growth, and Security Initiative proposes added funding of $7B in high priority areas. Although the funds are not included in the formal Air Force budget request of $109.3B, it is divided into four major categories: readiness, recapitalization, modernization, and installations. These funds will allow the Air Force to address operational shortfalls as the Air Force sets a course towards full-spectrum readiness to execute national defense requirements.

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 2014 QDR, our 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 Total Force Task Force and Total Force Continuum, and the tactical level application by Total Force Integration initiatives contribute to building further compatibility. 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

Top ANG Equipping Challenges

- Adequate funding for weapon system modernization efforts
- Sustaining legacy weapon systems
- Adequate funding for dual-use capabilities to support domestic operations and Federal missions

The Air National Guard (ANG) continues to support the full spectrum of humanitarian and combat missions overseas and in the homeland. 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.

In the ANG's state role, units provide support for civil authorities. Examples include fighting wildfires with the Modular Airborne Firefighting System (MAFFS); providing recovery efforts following the tornado that destroyed Moore, Oklahoma; conducting search and rescue operations by the Alaska Rescue Coordination Center, which saved 1,668 lives during 4,444 missions and assisted an additional 701 persons to safety; protecting the police command post in Ferguson, Missouri, during civil unrest; conducting maintenance of vital public services, for instance, clearing roads to assist emergency vehicles during Hurricane Sandy; and conducting counterdrug operations in the Rio Grande Valley of the Texas border.

The ANG's aging aircraft fleet faces significant sustainment and support costs. Modernizing, maintaining, and replacing capabilities are among the challenges the ANG faces. Air Force (AF) funding supplemented by National Guard and Reserve Equipment Appropriation (NGREA) funds permit modernization programs for ANG legacy equipment to remain viable for combatant commanders and supporting civil authorities. Modernization is critical to the Guard, which generally flies the oldest equipment in the Air Force. 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.

B. Changes since the Last NGRER

The current fiscal climate and national defense spending reductions continue to create fundamental operational challenges. However, ANG persists in pursuing procurement strategies that are both efficient and effective. The 2005 Defense Closure and Realignment Commission Final and Approved Recommendations affected 62 percent of ANG units and continue impacting the ANG as the Total Force Continuum and Total Force Integration are achieved. Base realignments and closures are creating associations with the AC and RC, thus resulting in fewer facilities, airframes, personnel, and support equipment. There are three types of associations: Classic Association (AC owns mission and equipment augmented by RC manpower), Active Association (ANG owns mission and equipment augmented by AC manpower), and Hybrid Association (one component host shares a mission with two or more associates from the other components). Currently, there are 21 Active Associations, 24 Classic Associations, and one Hybrid Association on the CSAF-approved list. These associations support mission sets, such as remotely piloted aircraft (RPA), engineering, air mobility, and flight training, and help keep the ANG ready, relevant and reliable to execute its Federal and state missions. A potential limiting factor of a Classic Association is that the ANG does not own the support equipment, thus limiting its ability to respond to state missions and natural disasters.

1. Equipment On-hand

a. Current Status

ANG support equipment availability rate has fallen from 96 to 93 percent in the past year. This rate drop is largely a result of implementing requirements of the FY 2013 National Defense Authorization Act (NDAA) as ANG equipment authorizations increased either due to mission changes, associations, or introduction of more modern equipment. For example, FY 2013 NDAA directed new ANG C-130 units, yet the AF was unable to provide most of the required equipment for those new units due in part to previously mandated Foreign Military Sales obligations it was required to fulfill.

b. Average Age of Major Items of Equipment

The ANG operates and maintains aircraft where the average age of aircraft is 26.5 years. The support equipment to sustain these aircraft is even older with many of the original manufacturers no longer producing these items, making support equipment upkeep increasingly cost prohibitive. See *Table 2 Average Age of Equipment* for the average age of selected aircraft.

2. Maintenance Issues

The ANG's concern about sustaining legacy systems has led to establishment of a Weapon Systems Sustainment Working Group. The charter of this group is to identify equipment sustainment shortfalls, prioritize them, and advocate for mitigation. The group identified the following maintenance issues.

a. Obsolete Support Equipment

Sustaining an aging aircraft fleet forces the ANG to utilize support equipment that have declining useful life and require increased sustainment costs. Aging and unreliable Isochronal Inspection (ISO) Stands, obsolescent test equipment no longer supported by the manufacturer, and unmodified, outdated F108 engines (used on the KC-135 air refueling aircraft) are critical maintenance risk factors needing immediate attention. Failure to provide replacements and accelerating long-term repairs will continue to jeopardize mission-capable rates and result in grounding aircraft.

b. Advanced Support Equipment Required

Current maintenance operations depend upon equipment based on technology from the 1970s and 1980s. Legacy equipment is cumbersome to use, expensive to operate, and often produces significant safety concerns. 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. Procurement of MJ-1E electric jammers will improve load crew training effectiveness while enhancing safety by eliminating noise and pollution from legacy diesel engines in enclosed training facilities. This new jammer conforms to the Presidential Directive to reduce use of fossil fuels within the Department of Defense (DOD). The enhanced e-Tools reader replacement program will eliminate the use of expensive laptop devices that introduce safety concerns when used in certain maintenance activities, by utilizing tablet technology in the same role. Potential candidates reduce the cost of the e-Tools program to roughly one-third of the current cost while improving

technical order access and usability. Procurement of the VXI-based mid-life upgrade for the Improved Avionics Intermediate Shop will update electronics, rectify diminishing manufacturing source issues, and extend the shop's useful life to 2030. A replacement to the 35 ton Joint Surveillance Target Attack Radar System (JSTARS) Axle Jack will provide greater safety and reduce task duration since the current jacks are at capacity. Failure to field state-of-the-art replacement equipment that relies on advanced technologies will adversely impact the ability to ensure longevity of our aging fleets in a safe and efficient manner, ultimately affecting the ability to launch aircraft sorties. The current 35 ton JSTARS jacks are being operated at maximum capacity, creating a potential safety risk, and causing longer, more intensive labor to maintain the aircraft.

c. C-130 ISO Stands

The current inventory of C-130 ISO stands are not safe to operate, according to Air Force Occupational Safety and Health (AFOSH) or Occupational Safety and Health Administration (OSHA) standards, but remain essential to completing critical periodic inspections. Many of these stands exceed 40 years of use and require constant maintenance to preserve their serviceability. Skillful adjustments used to keep the inventory functioning delays sortie generation, increases inspection times, and curtails aircraft availability. The three new stands required are valued at $1.6M would mitigate unnecessary risk and improve aircraft availability.

d. Flight Line Generator (72kW)

New 72kW generators were ordered and delivery began midyear FY 2014. 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. To date, approximately $1.35M has been spent to overhaul 25 generators to like-new condition at a cost of $54K per generator. There remains a shortfall of about $10M to either refurbish existing or purchase new generators.

e. KC-135 ISO Stands

Both the AC and ANG possess KC-135s with the ANG possessing the majority of KC-135s in the inventory. Many of the ISO stands the ANG owns were handed down from units who have divested KC-135s, and they have seen arduous previous use, frequent shipments and transfer between units. Most do not meet AFOSH or OSHA standards. Aging stands (some exceeding 40 years old) require frequent maintenance actions to maintain their serviceability and functionality. Current workarounds delay production, increase inspection times, and negatively impact aircraft availability. Modifications to stands at the unit level to repair or regain functionality are not a uniform or safe approach to addressing the issues with the old stands. ANG would like to purchase 18 new stands at $72M to alleviate unnecessary risk and allow maintainers to focus on aircraft specific tasks. The AC also replaced their KC-135 ISO stands when they encountered the same issues.

f. Aircraft Test Equipment

Test equipment items critical to daily operations at ANG units are quickly nearing the end of their expected useful life. As they age, it becomes increasingly difficult to sustain and uneconomical to repair this equipment. In many cases, the original manufacturer is no longer in

business, is unwilling to produce outdated equipment, or allow other sources to produce their proprietary equipment resulting in the ANG having diminishing sources for manufacturing items required for aircraft maintenance. During the 2013 Air Reserve Component Weapons and Tactics (WEPTAC) Conference, replacements for the following systems were identified as critical maintenance capabilities requiring immediate attention; Airdata/Pitot static test set, 50/60 Stray Voltage Pre-Load Tester, and multiple aircraft model hydrogen leak detector. The Airdata/Pitot static test sets and F-16, A-10, and F-15 50/60 testers in use are unsustainable, requiring fielding of replacement testers suitable for use during deployed sortie generation. Procurement of modern leak detection equipment that uses tracer gas or ultrasonic sound to identify leaks will enable maintenance personnel to trouble shoot and repair leaks in a fraction of the time compared to legacy tools and methods. Current methods require technicians to refuel aircraft to determine the validity of a fuel system repair. If a leak is still noted, the aircraft must be defueled, repaired, and then refueled again to check the validity of the repair; creating a time-consuming cycle to resolve the discrepancy. Failure to field the identified equipment will significantly reduce the Fully Mission Capable rates for the affected fleets. In most cases, the failure to field replacements will result in aircraft grounding. Fielding replacements eliminates ineffective maintenance actions and improves aircraft availability.

g. Maintenance Special Support Vehicles

Current maintenance operations depend upon equipment based on technology from the 1970s and 1980s. Procurement of an alternative tow vehicle will utilize new technology to 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 is intuitive to operate and requires less time to position aircraft which decreases man-hours, enhances operational safety, and reduces current deployment footprint. Failure to field state-of-the-art replacement equipment that relies on advanced technologies will adversely impact the ability to ensure longevity of our aging fleets in a safe and efficient manner.

C. Future Years Program (FY 2016–FY 2018)

1. Modernization Efforts

ANG unit-level experts identify capability shortfalls during the annual WEPTAC and Domestic Capability Priorities (DCP) conferences. At the annual WEPTAC conference, tactical experts and base operation support personnel from across the ANG identify and vet critical shortfalls with assistance from headquarters staff-level functional area managers. Solutions are typically commercial or government off-the-shelf technologies, and require only non-developmental integration into a weapons system. 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, which the Director of the ANG approves. For FY 2014, this process documented a $9.23B shortfall for modernization and recapitalization of the ANG aircraft fleet and associated equipment.

The complement to WEPTAC for domestic operations is the ANG DCP conference. The objective of the conference is to identify and prioritize materiel capabilities needed by National Guard units to support civil authorities during a domestic event. The conference is organized by functional areas to mirror the Federal Emergency Management Agency’s Emergency Support

Function (ESF) framework. The ESFs provide the structure for coordinating Federal interagency support during an incident. The output from this conference is published in the annual ANG DCP Book.

2. Modernization Programs and Shortfalls

A-10: In 2014, ANG began upgrading the A-10 with a parking brake and a new landing light. The addition of a parking brake allows refueling in austere locations without requiring ground personnel to place and remove chocks. The new landing light allows pilots to choose a night vision compatible light. The countermeasures processor software in the ALQ-213 electronic warfare management system was also upgraded with NGREA funding. This upgrade enables ongoing software upgrades to the ALQ-213 as threats evolve. NGREA funding will also support the installation of a helmet-mounted integrated targeting (HMIT) system to speed target acquisition and increase pilot situational awareness, and the Lightweight Airborne Radio System version 12 (LARS v12) to speed location of downed Airmen during combat search and rescue missions. The Air Combat Command (ACC) approved these modernization efforts, which conclude in FY 2015.

C-5: Conversion from C-5s to C-17s is underway, and all six remaining ANG C-5s will be replaced with eight C-17s by the end of FY 2015. All modernization efforts for ANG C-5s have been discontinued as they are being divested.

C-17: The most critical shortfall facing C-17s in the ANG is the lack of extended range tanks. These tanks are capable of holding an additional 65,000 pounds of fuel and permit the aircraft to fly up to an additional 1,800 nautical miles (empty aircraft). These tanks would enhance aeromedical evacuation and humanitarian relief missions as well as transporting troops and equipment around the world. They reduce the need for air refueling or fuel stops, enable faster cargo delivery and result in less wear and tear on the aircraft due to reducing landings and takeoffs to refuel enroute. C-17 modernization efforts also include Block 30 Large Aircraft Infrared Countermeasures (LAIRCM). This system will provide the most effective countermeasures against man portable air defense systems.

C-21: The Air Force has reduced its C-21 fleet from 28 aircraft to 17. With only two ANG aircraft and no AC C-21 squadron, airlift support to Air Force senior leadership has decreased significantly. Two additional aircraft in the fleet would ensure all critical requirements are supported.

C-130H: The ANG installed LAIRCM on the 119 aircraft programmed to receive LAIRCM. Crashworthy seats are fully funded, and installation in all ANG C-130s should begin soon. ANG continues pursuing contracts for the remaining aircraft in the C-130H fleet. ANG is also adding capabilities to the system that were identified after the operators began using the system and realized that there other improvements that could make the system even more effective. The C-130 program office has begun efforts to install the In-flight Propeller Balancing System that will improve reliability and save fuel by eliminating periodic ground maintenance and significantly reduce vibration damage from propeller operations. Also, the system program office (SPO) will soon begin a contract effort to install the Electronic Propeller Control System, which improves aircraft availability and safety by accelerating propeller response time. The ANG has also begun an investigation into the 3.5 engine improvements. This engine rebuild initiative

updates several major components in the existing C-130 engine to improve performance and save fuel. The ANG is initiating an Operational Evaluation that will operate two modified C-130s. These operational tests will track the performance of the aircraft/engines over an extended period and establish the long-term benefits of this modification. If successful, the ANG may explore updating the all C-130Hs with this modification in coordination with Air Mobility Command. Similarly, implementation of an alternate Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) program across the C-130H fleet is needed to allow more efficient operations in national and international controlled airspace for the foreseeable future. Pending Congressional approval, upon completion of the CNS/ATM program, the C-130H fleet will still require modernization. Funding will be required for this modernization program within the next decade.

C-130J: The C-130J brings vital mission expansions to the C-130 fleet; precision airdrop capabilities and protection against surface-to-air missiles are necessary. Current unfunded modernization requirements for the ANG C-130J fleet include MAFFS weather situational awareness, LAIRCM, AAR-47 Missile Warning System improvement, and Single Pass Precision-guided Airdrop capability. Ongoing C-130J modernization efforts, which began in early 2014, include increased firefighting safety to address the landing gear warning horn during MAFFS operations.

EC-130J: To immediately meet a critical satellite communications (SATCOM) requirement, the ANG fully funded a permanent SATCOM radio modification program. To bridge the gap in available capability while awaiting a longer term solution provided by the Air Force Special Operations Command (AFSOC), the ANG fully funded 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. To remain ready and relevant to perform missions, the minimum upgraded capabilities essential for the EC-130J include procurement of LAIRCM “A” and “B” kits, a permanent solution for situational awareness, and finishing the SATCOM upgrade. 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.

LC-130: The modernization of the LC-130 aircraft continues throughout 2014. So far, 7 of the 10 aircraft have been modified and the remaining three should be complete by the end of the year. The evaluation of the NP2000 eight-bladed propeller, which improves take-off performance and reduces the use of jet-assisted take-off, is complete and the acquisition plan is moving into production and fielding. The ANG awarded a contract to update the 1-1 Performance manual and also started working with the C-130 SPO to update all technical orders supporting production. This program is fully funded for the LC-130, and the technology is available for integration on other C-130 aircraft. The LC-130 Crevasse Detection Radar, which enables the pilot to identify and avoid crevasses in the deep 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 make it easier for the science community to make use of the LC-130 platform for research purposes. Use of innovative equipment that has minimal impact on the structure of the aircraft speeds the approval process and significantly reduces the engineering

required to install science equipment on the aircraft. Future LC-130 requirements include CNS/ATM avionics upgrades to maintain worldwide flight capability.

HC/MC-130: This mainstay weapons system underwent several recent upgrades to include the installation of an emergency locator transmitter and airborne direction finder, communication suite, oil cooler augmentation, 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 para-rescue personnel dismounting. 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 remain Total Force contributors. These investments will enhance the combat search and rescue and personnel recovery task force's effectiveness greatly. Recapitalization of ANG HC-130s is planned to begin in 2017.

E-8C Joint Surveillance Target Attack Radar System: The Air Force is pursuing the option to recapitalize the E-8C JSTARS. To be prudent, the ANG is continuing to fund modernization of the current JSTARS platform with NGREA funds to address operational equipment requirements needed for current operations. NGREA funding has delivered a communications suite with an integrated Internet-protocol (IP)-based chat capability, fulfilling a United States Central Command urgent operational need; purchased initial spares for the Enhanced Land Maritime Mode for the radar; enhanced cooling carts to enable maintenance during the day in the heat of the deserts in deployed locations; purchased 8.33 kHz very high frequency (VHF) radios for a voice-over-data, frequency-spacing capability; and upgraded International Maritime Satellite service from Swift64(B) to Swift Broadband (C). The Air Force is now procuring and installing the kits for an upgrade of the primary mission equipment (airborne radar signal processors, computers for operator workstations and blue force tracking hardware) to resolve issues with diminishing manufacturing sources for parts. The Air Force completed the replacement of the Joint Tactical Information Distribution System terminal with the Multi-functional Information Distribution System Joint Tactical Radio System.

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 52 AESA radars for the ANG. However, 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 Aerospace Control Alert missions. NGREA funds will also be used to procure and install the hardware required to carry the critically important back-of-launcher (BOL) external countermeasures system. BOL dramatically improves ANG F-15C survivability against widely-proliferated advanced threats. NGREA funding purchased 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 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 beyond line-of-sight (BLOS) communication capability for alert aircraft, the ANG worked with the system program office to field an initial, standalone SATCOM capability with NGREA funding.

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 has not yet entered 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: 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. To counter the proliferation of infrared-guided man-portable shoulder-launched surface-to-air missiles, the ANG is also investigating procurement of an off-the-shelf pylon-mounted missile warning system for the ANG F-16 fleet. If sufficient funding is available, ANG will procure a second ARC-210 radio for pre-block F-16s to enable simultaneous SLOS and BLOS operations, and a three-dimensional audio system to reduce pilot workload by synchronizing and spatially separating multiple radios.

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, VHF/frequency modulation (FM), VHF/amplitude modulation (AM), and ultrahigh frequency (UHF)/AM radios with four ARC-210 multi-band radios. The first aircraft modification and associated support, such as new or updated technical orders, is funded with NGREA, and the AFR and ANG continue to budget funding to retrofit the remaining aircraft. While ACC continues to develop a permanent Smart, Multi-Function Color Display (SMFCD) solution, the ANG in interim supports a temporary SMFCD. During the past four years ANG has flown with SMFCDs with a permanent solution still in the works and years away from fielding. Additionally, the Air Force funded an improved

vibration monitoring system, improved altitude hover and hold stabilization, LARS v12, and a defensive weapon system. To remain ready and relevant to perform missions, the minimum upgraded capabilities essential to the HH-60G are; 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. Considering the HH-60G fleet is rapidly aging and experiencing an increase in component failures causing increased maintenance rates, a recapitalization effort is needed. An approved and funded initiative to replace HH-60s lost in combat will return the number of aircraft to 112 by FY 2017. The ANG plans to receive no less than four of these aircraft (Congressionally-mandated). The Combat Rescue Helicopter program of record will fully recapitalize the HH-60 fleet.

KC-135: Changes in employment concepts put the KC-135s in high-threat areas. This vulnerability requires addition of LAIRCM capability. Air Mobility Command has approved an addendum to the KC-135 baseline configuration to include LAIRCM for RC aircraft. The Block 30 system will bring a range of performance and capability improvements and growth potential to the LAIRCM system and will allow for future upgrades required to keep pace with the advancing threat. The ANG has placed a high priority on, and has agreed to fund LAIRCM on the KC-135. For the KC-135 to continue its mission in the future, the ANG has established a critical need for a tactical data link (TDL)/Real Time Information in the Cockpit (RTIC) system for crew situation awareness in high-threat environments as well as enhanced external overt/covert lighting to reduce the chance of midair collisions when operating at night in high-threat environments. The ANG will fund the TDL, RTIC, and LAIRCM initiatives if sufficient funding becomes available.

Remotely Piloted Aircraft: The ANG has eight operational RPA units: five MQ-1 units, which are scheduled to convert to the MQ-9, and two units which already operate the MQ-9. These units are located in Arizona, California, North Dakota, New York, Ohio, Tennessee, and Texas; a classic associate unit is in Nevada. The ANG also operates one MQ-9 Formal Training Unit (FTU) and field training detachment (FTD) in California and one MQ-9 FTU/FTD in New York. Additionally, as there is no established Continuation Training or Flying Hour Program for the RPA units in the continental United States, additional Predator [Reaper] Mission Aircrew Training Systems (PMATS) or 'PMATS-lite' are required at each ANG RPA mission-control element location. At this time Ohio, Tennessee, and all five of the RPA units added by FY 2013 NDAA (Iowa, Michigan, Pennsylvania, Arkansas, and New York-Niagara Falls) lack any type of on-site Mission Simulator/Trainer. 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; airspace integration systems such as sense and avoid with subsystems that meet Federal Aviation Administration requirements to permit flight in civil airspace; more rapid exploitation of support data; and rapid data file transfer and sharing.

C-32B: Critical capability shortfalls in the C-32 have been met using a combination of AFSOC and NGREA funds. AFSOC funded the Ku Band Spread Spectrum upgrades for both aircraft, and NGREA funds were used to replace the Communications Management System.

C-38: The C-38s have limited range, are difficult to maintain, and expensive to operate due to diminishing manufacturing sources of aircraft parts. Replacing the C-38s will address these capability gaps. The current requirements call for four small capacity executive support aircraft. To ensure regular support and minimize unplanned maintenance impacts, four aircraft will fulfill the need.

C-40: The ANG has funded a high-speed data internet capability, which will allow passengers to connect via non-secure internet and e-mail while airborne. However, it is an expensive, low bandwidth capability that does not provide the throughput to allow IP video and data capability that is required for users and other official travelers. A cost effective, line-of-sight, land-based high speed data capability will enable IP voice, video, and data capability while operating within the continental United States. As such, this will allow greater access and connectivity for required users and other official travelers while in-flight, which will greatly enhance their productivity and ability to carry out their official duties while traveling. Current C-40 requirements for the ANG fleet call for four aircraft, three of which have been procured. A fourth aircraft would ensure consistent mission support and minimize the impact of unplanned maintenance.

Battlefield Airmen (BA): BA capabilities are associated with combat controllers, Guardian Angels (GA) and tactical air control parties, and the ANG continues to pursue effective solutions to meet critical capability gaps in those areas. The top priority is the BA Operations kit program, which provides BA with enhanced situational awareness and communication capabilities. With new technological advances in communications, rescue vehicles, and personal protective equipment, coupled with the large number of ANG units requiring modernization, these requirements will need funding for many years. However, previous NGREA funds allowed ANG planners to implement some of these modifications years before ACC was scheduled to have funds available. However, to remain viable and relevant as a Total Force partner, ANG BA need improved weapons, continued advancements with coded spot trackers, and short-wave infrared devices. Optimal employment requires wireless solutions, improved night vision devices, advanced tactical headsets, and less-than-lethal weapons. Up to this point, attempts to modernize and upgrade the weapons carried by ANG GAs have been unsuccessful. Although the mission of GAs is more aligned with special operations, they are currently only authorized weapons purchased by Air Force Small Arms Program Office.

Control and Reporting Center (CRC)/Air Control Squadron: 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. Additionally, the removal of the Theater Deployable Communications assets from the CRC will significantly impact ANG training capabilities. NGREA funding is needed to address the shortfalls in the CRC internal C2 network and data-link capabilities, fulfill live mission training requirements, and enable an effective approach to support airframe and ground mission crew training scenarios. Previous NGREA support ($2.5M) enabled the CRC to field a Power Distribution Panel system that satisfies the DOD goals for deployable operational energy conservation plans and distribution. 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 address urgent requirements identified in recent evaluations. These efforts will ensure the CRC can meet any tasking requiring C2 battle management capabilities. The Integrated Digital Mission Recording and Playback system for the Operational Modules continues to be a major mission reconstruction capability allowing mission playback that mitigates current degradation in debriefing, safety, and training ($258K).

Component Numbered Air Force/Air Operations Center (AOC): In a collaborative effort between ANG, ACC, and Air Force Materiel Command planners, all six ANG AOC suites, those units aligned to a geographic combatant command, will be upgraded to the AOC 10.1 Recurring Event 11 system configuration by July 2015. FY 2014 funding has been provided for the equipment associated with the Recurring Event 11. As long as the FY 2016 President's Budget request is supported, FY 2016 dollars will fund the installation for the Recurring Event 12 and 13 configuration upgrades at all of the ANG Air Operations Group (AOG) sites. Recurring Event 13 upgrades are scheduled to occur in the FY 2015–FY 2017 timeframe. In addition, the ANG has funded Joint Range Extensions (JRE) to all ANG AOGs, but to take full advantage of these upgrades a Core Radio Package (CRP) solution will be required for the ANG AOG sites. The estimated total cost of the Core Radios will be $5M. This package consists of multiple radios and data-link functionality that are necessary for the operation of the JRE and for continuity of AOG training. Without upgrades to all suites, ANG sites will not be able to maintain mission capable personnel due to incompatibility of C2 mission applications and data interoperability between RC and supported AOC locations. All of the proposed upgrades, Recurring Events 12 and 13, JRE, and CRP are critical components that facilitate Distributed Mission Operations (DMO) between the ANG AOGs and their assigned geographic AOCs and enhance process integration within the AOC mission. Other AOC system-related shortfalls are in intelligence capabilities that require additional Targeting Work Stations to train targeters ($2M).

Expeditionary Air Traffic Control, Deployable Radar Approach Control (D-RAPCON): Currently, the 1950s analog-based AN/MPN-14K is still the primary ANG deployable Air Traffic Control system receiving minor radar upgrades in the 1980s. With modern technological advances, the sustainment of legacy systems such as the AN/MPN-14K are increasingly more difficult as many of the subsystems are no longer commercially available or produced. ANG replacements for these legacy systems are scheduled with a total of 10 digital D-RAPCON systems having initial operational capability in FY 2018 and full operational capability in FY 2021. The new system will also include the new Deployable Instrument Landing System as an AN/MPN-14K Precision Approach Radar component replacement.

Live, Virtual, Constructive (LVC) Simulation and Range Instrumentation: 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 and exercises adds a unique dimension to readiness training. As part of the Guard's "design before you buy" strategy, both flight and mission crew simulator proofs of concept are constructed in partnership with government technology development centers and industry. This approach ensures that production decisions are made only after evaluation by ANG subject matter experts, resulting in reduced risk, cost, and schedule. ANG simulator programs currently fielding include: 17 KC-135 Boom Operator Simulation Systems, 17 ANG

Advanced Joint Terminal Attack Controller Simulation Systems, seven C-130H Multi-Mission Crew Trainers (MMCT), 1 HH-60G MMCT to support HH-60G formal training and technology and obsolescence upgrades for the F-15 and F-16 unit simulators requiring $4M to $6M per year through the Future Years Defense Program. In addition, LVC capability improvements at the seven ANG AOCs, 601st AOC, and three Air Defense Sectors have been funded. Current LVC upgrades at the ANG's 14 air-to-ground ranges include High Fidelity Surrogate Target Systems, which require an additional $2.8M for full deployment. Two high-fidelity C/EC/HC-130J weapons system trainers at $30M will alleviate the shortfall. During a 24-month period, the ANG will deliver nearly 50 simulators and trainers to the warfighter.

Cyber Warfare (CW) and Information Operations: Over the past two 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 (CCIR). Currently, the same funds will equip three ANG CW units with a capability for rapid coordination and information sharing in real-time plus CCIR capability to a new CW unit in California. The ANG will pursue acceleration of Air Force equipment for hunter and cyber vulnerability assessment operations in at least one ANG unit.

RC-26B: Six Block 25 aircraft have returned from deployments with United States Special Operations Command with outdated and obsolete mission equipment. They are under contract to be modified 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. This is being accomplished using FY 2014 NGREA funds, and FY 2015 funding is planned to be added to the contract to include the five Block 20 aircraft so that all 11 aircraft will once again have a common configuration.

Distributed Common Ground System (DCGS): ANG is actively following the projected July 2015 delivery and installation of the ANG's third and final suite of AF DCGS high-altitude equipment at Distributed Ground Site – Massachusetts (DGS-MA), Otis Air National Guard Base (ANGB). Installation of the high-altitude equipment at Otis ANGB has been pushed back multiple times mainly due to facility issues that are nearing resolution. However, programmatic delays in fielding upgrades to both the signals intelligence and geospatial intelligence (GEOINT) components of the AF DCGS baseline have also contributed to the delay. Likewise, the GEOINT systems at DGS-AL (Alabama), Arkansas and Nevada are reaching end-of-life, but are not ranked high on the AF DCGS SPO's upgrade list. The 25th Air Force, formally known as the AF ISR Agency, is actively engaged in assisting the ANG efforts to move these three sites up the SPO's upgrade install list. Otherwise, these sites will soon be incompatible with the AF DCGS baseline and any upgraded/new GEOINT sensors being fielded in the near future. Finally, 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.

Security Forces (SF): The ANG is actively filling SF equipment shortfalls utilizing NGREA and other funding sources. SFs require outfitting with the most modern equipment available due to their extremely high operations tempo, air expeditionary force deployments, and defense support of civil authorities missions. Current programs the ANG is funding are: less than lethal kits, portable modular ranges, and target acquisition and night observation equipment. The ANG SF has no K-9 support, and the procurement of K-9 resources is not an option. Consequently,

99 percent of ANG bases received handheld explosive detection devices to compensate for the lack of K-9 resources. The ability to detect explosives at base entry control points can significantly improve installation security and provide a higher level of safety and security for all Airmen. In addition, explosive threats/incidents overseas are increasing in numbers and complexity, and ANG SF has limited capability to detect these threats, resulting in a major vulnerability.

The ANG SF is not equipped to effectively respond with less-than-lethal force to any given scenario, creating a liability and putting the safety of ANG Airmen at risk. AF instructions for using force mandate options for less-than-lethal actions short of using lethal force. Lack of less-than-lethal capabilities and equipment greatly hinders our SF ability to secure an area effectively, particularly when performing domestic operations missions, without resorting to lethal force. Additional capabilities for taking less-than-lethal action would align ANG SF with its AC counterparts. ANG SF currently has a $7M shortfall for 146 less-than-lethal force kits.

SF Airmen deploy at more frequent rates and for longer periods as compared to most other Airmen, which causes an increased degradation of equipment in SF mobility bags. ANG SF forecast a shortfall of approximately $3M for replacement and sustainment.

The ANG SFs are limited by the identified shortfalls, thus reducing the capability to concurrently provide the public safety and security at home stations, during overseas contingencies, and when performing domestic operations. These shortfalls have been identified previously, and the ANG is attempting to fill the requirements through central AF procurement processes or through other funding sources.

Medical: In the past, ANG has used NGREA funding to modernize its Expeditionary Medical Support assemblages to current standards. ANG anticipates total shortfalls of $2M based on ACC's plan to modernize the medical oxygen system and ventilators in FY 2016. ANG is also reviewing the old medical equipment in the original 17 Chemical, Biological, Radiological, Nuclear, and High-yield Explosives (CBRNE) Enhanced Response Force Package units to determine if they are still suitable substitutes to more modern equipment in the Joint Mission Essential Equipment List. Although they were suitable two years ago, some of the lifesaving equipment is no longer supported by the manufacturers and need to be modernized.

Engineering: Prime power, explosive ordnance disposal (EOD) equipment, bridge repair kits, search and rescue, and firefighting equipment shortages are inhibiting the ANG's ability to concurrently perform home station and overseas deployments, or provide support to civil authorities. For example, power generation capability used to provide stable, reliable electrical power in deployed environments either abroad or during National Guard domestic operations needs an investment of over $5M to redress shortfalls. Additionally, the FY 2016 Total Force Continuum implementation plan identifies additional ANG prime power at nine different locations including requiring $13M in equipment costs. During domestic operations, this power could be a lifesaving capability for an affected community. 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. Additionally, 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 ANG is working diligently through the DCP, NGREA, and central AF procurement processes to acquire prime power capability to ensure safe, reliable, and effective power is available for Federal and civil support requirements. For example, the ANG acquired a power generation capability for the 150th Civil Engineer Squadron, which is the pilot unit for this capability. The second team is 118th Civil Engineer Squadron that has 80 percent of the equipment needed.

Another example of an engineering shortfall is the continued need for explosive detection devices for EOD. To combat this vulnerability, the ANG, through NGREA funding, is procuring 17 state of the art bomb squad emergency response vehicles, 17 total containment vessels for explosives found and removed, along with remote controlled robots to prevent harm to the Airmen responding to explosive ordinance threats.

3. Equipment Shortages and Modernization Shortfalls at the End of FY 2018

For the past three years, ANG emphasis continues to target the modernization, upgrading, and procurement of communications and firefighting equipment to focus on both combat operations and civil support operations. ANG communication efforts leverage existing networks and data links to provide vital information and tactical data directly to aircraft cockpits and BA, improve air defensive operational battlefield awareness, provide Joint Force Headquarters-State 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 July 2014 for wildfires occurring across the Nation. This year, ANG purchased some of the firefighting vehicles, protective equipment, and equipment for rescue operations needed, continuing to remove 20+ year replacement eligible vehicle assets and further enhancing rescue mission capabilities Further clarification on equipment and modernization shortfalls anticipated through the end of FY 2018 is provided in the description of individual weapons systems modernization in the preceding “Modernization Programs and Shortfalls” section of this chapter and in the “ANG Equipment Shortfalls” section in Appendix B.

D. Summary

The FY 2014 National Commission on the Structure of the Air Force provided two core recommendations (1) as the Air Force acquires new equipment, force integration plans should adhere to the principle of proportional and concurrent fielding across the components, and (2) the Air Force should plan, program, and budget for increased reliance on the RCs to fully leverage the full capacity of all components of the force. With this in mind, the modernization and acquisition of ANG equipment is critical to the overall Air Force mission as it contributes nearly a third of the fighter, airlift, and air refueling capability of the America’s Air, Space, and Cyberspace defenses. The focused, judicious use of NGREA funds over the past several years, amplified by corporate Air Force funds, enabled ANG planners to significantly improve overall capabilities that contribute to both the Total Force’s Federal mission, as well as, ANG state mission responsibilities. Nevertheless, the need for continued modernization on par with the Air Force, as well as, the ability to successfully respond to requests to support civil authorities with its dual-use equipment and aging fleet of aircraft remains a paramount concern for ANG leadership. Continual unit mission changes, increased classic associations, and the corresponding reduction in equipment authorizations dilute ANG infrastructure and expertise likewise reducing the effectiveness of ANG’s ability to respond to requests from civil authorities. Regardless, ANG

leadership is committed to facing the challenges of a fiscally constrained environment by looking for those equipment modernization efforts and new innovations that provide the best value to support both the combatant commander missions overseas, and the needs of American citizens in the civil support of the homeland.

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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 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Air Refueling							
Air Refueling, KC-135R	KC-135R	$53,100,000	148	148	148	148	148
Air Refueling, KC-135T	KC-135T	$53,100,000	24	24	24	24	24
Airlift							
Airlift, C-130H	C-130H	$21,000,000	140	138	138	138	138
Airlift, C-130J	C-130J	$61,700,000	20	20	20	20	20
Airlift, C-17A	C-17A	$237,300,000	34	34	34	34	34
Airlift, C-5A	C-5A	$139,600,000	0	0	0	0	0
Airlift, LC-130H[1]	LC-130H	$71,000,000	10	10	10	10	10
Airlift, WC-130H	WC-130H	$60,000,000	8	0	0	0	0
Electronic Warfare (EW)							
EW, E-8C	E-8C/AOT	$221,700,000	11	11	11	11	11
EW, EC-130J	EC-130J	$50,700,000	3	3	3	3	3
EW, RC-26B	RC-26B	$4,200,000	11	11	11	11	11
Fighter							
Fighter, A-10C	A-10C	$13,000,000	64	43	22	22	22
Fighter, F-15C	F-15C	$24,400,000	102	102	102	102	102
Fighter, F-15D	F-15D	$24,400,000	18	18	18	18	18
Fighter, F-16C	F-16C	$7,000,000	293	293	293	293	293
Fighter, F-16D	F-16D	$7,200,000	45	45	45	45	45
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-38A	C-38A	$10,400,000	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	6	2	2	2
Rescue, HC-130P	HC-130P	$21,000,000	3	3	3	3	3
Rescue, HH-60G	HH-60G	$11,900,000	17	17	17	17	17
Rescue, HH-60M	HH-60M	$17,600,000	0	0	4	8	8
Rescue, MC-130P	MC-130P	$21,000,000	4	4	4	0	0
Miscellaneous Equipment							
MD-1A/B	MD-1A/B	$1,900,000	25	26	26	26	26
MQ-1B	MQ-1B	$3,100,000	33	33	0	0	0
MQ-9A	MQ-9A	$8,800,000	14	30	30	30	30

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 2015.

Nomenclature	Equip No.	Average Age	Remarks
Air Refueling			
Air Refueling, KC-135R	KC-135R	53	
Air Refueling, KC-135T	KC-135T	55	
Airlift			
Airlift, C-130H	C-130H	26	
Airlift, C-130J	C-130J	10	
Airlift, C-17A	C-17A	14	
Airlift, C-5A	C-5A	43	
Airlift, LC-130H	LC-130H	29	
Airlift, WC-130H	WC-130H	49	
Electronic Warfare (EW)			
EW, E-8C	E-8C	14	ANG has the TE008A (E-8 trainer) with 24 years average age
EW, EC-130J	EC-130J	13	
EW, RC-26B	RC-26B	19	
Fighter			
Fighter, A-10C	A-10C	34	
Fighter, F-15C	F-15C	31	
Fighter, F-15D	F-15D	32	
Fighter, F-16C	F-16C	25	
Fighter, F-16D	F-16D	26	
Fighter, F-22A	F-22A	9	
Operational Support			
Op Support, C-21A	C-21A	27	
Op Support, C-32B	C-32B	11	
Op Support, C-38A	C-38A	16	
Op Support, C-40C	C-40C	11	
Rescue			
Rescue, HC-130N	HC-130N	21	
Rescue, HC-130P	HC-130P	48	
Rescue, HH-60G	HH-60G	24	
Rescue, MC-130P	MC-130P	48	
Miscellaneous Equipment			
MQ-1B	MQ-1B	6	
MQ-9A	MQ-9A	3	

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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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Modification of Inservice Aircraft			
F-15	$161,779,000	$25,228,000	$39,580,000
F-16	349,000	941,000	897,000
F-22A	5,132,000	15,747,000	9,793,000
C-17A	256,000	800,000	294,000
C-40	600,000		
C-135	19,923,000		
E-8	17,259,000	4,445,000	4,367,000
H-60	772,000		
Aircraft Replacement Support Equipment	603,000		
Vehicular Equipment			
Passenger Carrying Vehicles	231,000	222,000	227,000
Medium Tactical Vehicle	2,346,000	2,017,000	2,052,000
Items Less Than $5M (Cargo and Utility Vehicles)		286,000	291,000
Runway Snow Removal and Cleaning Equipment	661,000	355,000	362,000
Items Less Than $5M (Base Maintenance Support)	2,258,000	2,333,000	2,375,000
Electronics and Telecommunications Equipment			
Air Traffic Control and Landing System	1,552,000	10,450,000	19,220,000
General Information Technology	3,757,000	3,870,000	3,986,000
AF Global Command and Control System	112,000	114,000	117,000
Theater Battle Management Command and Control System	150,000	150,000	150,000
Air and Space Operations Center - Weapon System	1,752,000	1,805,000	1,859,000
Information Transport Systems		19,393,000	48,600,000
Tactical Communications-Electronic Equipment	1,288,000	1,327,000	1,366,000
Base Communications Infrastructure	6,648,000	8,769,000	8,925,000
Communications and Electronics Modifications	1,552,000		
Other Base Maintenance and Support Equipment			
Night Vision Goggles	716,000	421,000	426,000
Items Less Than $5M (Personal Safety and Rescue Equipment)	3,682,000	3,559,000	3,623,000
Mechanized Material Handling Equipment	2,756,000	2,613,000	2,496,000
Base Procured Equipment	1,041,000	986,000	927,000
Items Less Than $5M (Base Support Equipment)	1,078,000	887,000	827,000
Total	**$238,253,000**	**$106,718,000**	**$152,760,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment[2]			
Air Superiority / Global Precision Attack			
Advanced Targeting and Synthetic Aperture Radar Pods	$64,466,038		
A-10/F-15/F-16 Avionics Upgrades	63,684,047		
A-10/F-15/F-16 Helmet Mounted Cueing System	12,917,001		
A-10/F-15/F-16 Communications Suite Upgrade	11,797,742		
A-10/F-15/F-16 Defensive Systems Upgrades	8,644,244		
A-10/F-15/F-16 Advanced Identification, Friend or Foe (AIFF) and Sensor Enhancements	7,411,723		
A-10 Austere Field Operations Enhancements	3,370,000		
Rapid Global Mobility			
C-130H/J, KC-135, EC/HC/MC-130 Defensive Systems	27,312,320		
C-130/KC-135 Tactical Data Link and Communications Upgrade	19,117,000		
C-130H/LC-130 Enhanced Engine and Propulsion Performance	7,421,680		
LC-130 Crevice Detection Equipment	2,500,000		
Simulation / Distributed Mission Operations (DMO) / Training			
F-15/F-16/A-10 Simulators	19,767,928		
Joint Terminal Air Controller (JTAC) Simulators with ARCNET Gateways	16,353,000		
ANG Range and Instrumentation Upgrades	3,255,000		
C-130 Multi-mission Crew Trainer	2,669,664		
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade	1,486,015		
HH-60/RC-26 Aircrew Procedures Trainers	1,300,000		
Command and Control (C2) Training Equipment	283,250		
Personnel Recovery / Special Operations			
HC/MC/EC-130 Communication, Avionics and Sensor Upgrade	18,034,594		
Special Tactics / Guardian Angel / Joint Terminal Attack Controller Equipment	13,750,341		
HH-60G Communication and Avionics Upgrade	10,505,038		
HC/MC-130 Cargo Compartment Equipment	4,103,633		
Global Integrated ISR / Space Superiority / Cyberspace Superiority / C2 / Incident Awareness and Assessment			
RC-26B Avionics, Communications and Sensor Upgrade	11,900,000		
Eagle Vision Capability Upgrades	11,400,000		
MQ-1/MQ-9 Data Transfer and Sharing Upgrade	6,879,000		
Air Operations Center Capability Upgrades	6,450,000		
E-8C Joint Surveillance Targeting Attack Radar System (JSTARS) Communication and Avionics Upgrade	5,860,000		
Cyber Training Equipment/Cyber Operations Modernization	5,530,014		
Logistics			
Flight Line and Back Shop Advanced Logistics Equipment	18,813,466		

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
C-130 Support Equipment	4,099,846		
Communications			
Joint Incident Site Communications Capability (JISCC) and Vehicles	2,500,000		
Public Works and Engineering			
Explosive Ordnance Disposal (EOD) Equipment, Vehicles, and Robots	6,277,080		
Firefighting			
Firefighting Vehicles	9,649,382		
Mass Care			
Disaster Relief Beddown Sets (DRBS)	9,558,227		
Disaster Relief Mobile Kitchen Trailer (DRMKT)	4,716,693		
Public Health			
Expeditionary Medical Support (EMEDS) Modernization	1,388,989		
Medical Rapid Response Equipment	120,459		
Security Forces			
Security Forces Equipment	15,579,133		
Modular Small Arms Ranges	8,285,386		
Emergency Management			
Chemical, Biological, Radiological, and Nuclear (CBRN) Detection and Decontamination	5,822,067		
FY 2014 NGREA Equipment			
Air Superiority / Global Precision Attack			
Combat Air Forces (CAF) Communications Suite Upgrade		$29,403,142	
CAF Avionics Upgrades		28,640,288	
CAF Combat Operations Enablers		8,400,000	
CAF Defensive Systems Upgrades		4,950,243	
CAF Helmet Mounted Cueing System		4,678,000	
CAF Advanced Identification Friend, or Foe (AIFF), GPS, and Sensor Enhancements		3,660,000	
Advanced Targeting and Radar Enhancements		1,300,000	
Rapid Global Mobility			
C-130H/J, KC-135, EC/HC/MC-130 Defensive Systems		46,500,000	
C-130H/LC-130 Enhanced Engine and Propulsion Performance		16,150,000	
C-130/KC-135 Tactical Data Link and Communications Upgrade		10,600,000	
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		15,232,000	
C-130 Multi-Mission Crew Trainer		4,830,000	
CAF Simulators		4,050,000	
ANG Range and Instrumentation Upgrades		2,577,276	
Command and Control Training Equipment		1,200,000	
Cyber Training Equipment		954,700	
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade		300,766	
HH-60/RC-26 Aircrew Procedures Trainers		295,000	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
Distributed Mission Operations Equipment		140,000	
Personnel Recovery / Special Operations			
EC-30, C-32 Communication, Avionics, and Defensive System Equipment		11,400,000	
HH-60G Communication, Avionics, and Defensive Upgrade		6,895,368	
Special Tactics/Guardian Angel/Joint Terminal Attack Controller Equipment		5,673,921	
HC/MC/EC-130 Communication, Avionics, Cargo Compartment, Refueling, Engine, and Defensive Upgrade		5,069,000	
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		9,966,600	
Command and Control (C2) System and Communications/Link Modernization		9,350,200	
RC-26B Avionics, Communications, and Sensor Upgrade		7,860,000	
Eagle Vision Capability Upgrades		5,000,000	
Cyber Training Equipment/Cyber Operations Modernization		4,716,500	
MQ-1/MQ-9 Virtual Common Operating System Modernization		2,500,000	
MQ-1/MQ-9 Exploitation Data Upgrade		187,000	
Agile Combat Support			
Security Forces Equipment		11,446,725	
Emergency Management Equipment		9,141,457	
Flight Line and Back Shop Advanced Logistics Equipment		8,878,255	
Joint Incident Site Communications Capability (JISCC) and Vehicles		8,500,000	
Aircraft Support Equipment		7,203,250	
Public Health and Medical Services Equipment		5,534,720	
Firefighting Interoperable Communications		2,604,700	
Explosive Ordnance Disposal (EOD) Equipment, Vehicles and Robots		2,265,936	
Fire Fighting Vehicles		1,524,000	
Prime Power Vehicles and Generators		1,055,953	
Total	**$454,980,000**	**$315,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 will be provided in next year's NGRER.
2. A decrement of $5,020,000 was applied to ANG FY 2013 NGREA due to FY 2013 sequestration reduction allocation.

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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 2016 Qty	FY 2017 Qty	FY 2018 Qty	Remarks
Airlift					
Airlift, C-130H	C-130H	-2			
Airlift, WC-130H	WC-130H	-8			
Fighter					
Fighter, A-10C	A-10C	-21	-21		
Rescue					
Rescue, HC-130N	HC-130N		-4		
Rescue, HH-60M	HH-60M		+4	+4	
Rescue, MC-130P	MC-130P			-4	
Miscellaneous Equipment					
MD-1A/B	MD-1A/B	+1			
MQ-1B	MQ-1B		-33		
MQ-9A	MQ-9A	+16			

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
Fighter							
Fighter, A-10C	A-10C	-6	-2				
Operational Support							
Op Support, C-21A	C-21A	-24	0				
Miscellaneous Equipment							
MQ-9A	MQ-9A	+2	+7				
FY 2012 P-1R Equipment							
Modification of In-service Aircraft							
A-10				$42,600,000	$0		
F-15				799,000	58,010,000		
F-16				11,510,000	7,900,000		
F-22A				0	26,876,000		
C-5				3,829,000	0		
C-17A				1,161,000	0		
C-130				78,754,000	14,496,500		
C-130J Mods				4,797,000	0		
C-135				1,083,000	1,310,000		
E-8				3,977,000	10,008,000		
H-60				5,199,000	2,311,000		
Vehicular Equipment							
Passenger Carrying Vehicles				0	515,000		
Medium Tactical Vehicles				0	1,890,000		
Security and Tactical Vehicles				0	7,000		
Items Less Than $5M (Cargo & Utility Vehicles)				3,949,000	0		
Items Less Than $5M (Special Purpose Vehicles)				11,130,000	0		
Fire Fighting/Crash Rescue Vehicles				6,622,000	1,250,000		
Items Less Than $5M (Materials Handling Equipment)				1,386,000	0		
Runway Snow Removal and Cleaning Equipment				5,298,000	1,884,000		
Items Less Than $5M (Base Maintenance Support Vehicles)				3,545,000	0		
Electronics and Telecommunications Equipment							
Air Traffic Control & Landing System				1,788,000	1,758,000		
National Airspace System				4,836,000	3,796,000		
Battle Control System - Fixed				997,000	979,000		
Theater Air Control System Improvement				4,083,000	0		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
General Information Technology				992,000	0		
AF Global Command & Control System				207,000	0		
Theater Battle Management C2 System				400,000	488,000		
Air & Space Operations Center Weapon System				3,250,000	0		
Tactical Communications-Electronic Equipment				41,716,000	35,315,000		
Base Communications Infrastructure				17,128,000	12,923,000		
Other Base Maintenance and Support Equipment							
Night Vision Goggles				309,000	0		
Mechanized Material Handling Equipment				600,000	0		
Items Less Than $5M (Base Support)				377,000	0		
FY 2012 NGREA Equipment							
Air Superiority/Global Precision Attack							
A-10/F-15/F-16 Avionics Upgrades						$21,439,882	$16,028,488
A-10/F-15/F-16/HH-60 Helmet Mounted Cueing System						28,711,020	30,325,020
A-10/F-15/F-16 Advanced Identification Friend or Foe (AIFF) and Sensor Enhancements						9,212,310	8,572,310
A-10/F-15/F-16 Defensive Systems Upgrades						5,117,964	5,131,205
A-10 AN/ARS-6 V12 Lightweight Airborne Radio System (LARS)						7,998,926	6,900,000
A-10/F-15/F-16 Communications Suite Upgrade						4,418,216	3,955,393
Advanced Targeting Pods						18,762,691	17,512,691
E-8C JSTARS Communication and Avionics Upgrade						10,400,000	10,400,000
Rapid Global Mobility							
C-130/KC-135 Tactical Data Link and Communications Upgrade						44,559,200	42,270,439
C-130 Propulsion Upgrade						4,315,000	3,765,000
C-40C High Speed Data						3,399,186	3,399,186
C-130H/J, KC-135, EC/HC/MC-130 Survivability						700,000	10,300
C-130J Increased Fire Fighting Safety						150,000	0
Simulation/Distributed Mission Operations (DMO)/Training							
KC-135 Boom Operator Simulator System (BOSS) / Flight Deck Simulator Upgrade						10,995,177	10,995,177
ANG Range and Instrumentation Upgrades						7,934,873	7,934,873
Joint Terminal Air Controller (JTAC) Simulators with ARCNET Gateways						4,293,613	4,979,503
F-15/F-16/A-10 Simulators						2,650,234	2,650,234
MQ-9 Reaper Mission Training Device (MTD)						336,000	336,000
Air Operations Center Communications (AOC) Training Lab						291,138	291,138
Personnel Recovery/Special Operations							
HC/MC/EC-130 Communication and Avionics Upgrade						10,507,860	12,181,090
EC-130/C-32 Communication Upgrade						6,400,000	5,196,934
Security Forces Equipment						8,486,205	8,486,205
Tactical Air Control Party (TACP) Survivability Equipment						5,098,781	5,991,060
Battlefield Airmen Communication and Data Link Equipment						1,958,030	1,958,030
Guardian Angel Combat Survivability Equipment						1,984,145	2,651,218

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
HC/MC-130 Cargo Compartment Safety Equipment						517,950	1,286,662
HC/MC-130 Engine Upgrade						3,602,000	0
HH-60G Communication and Avionics Upgrade						3,291,478	6,836,514
Multiple Mission Design Series (MDS) Leak Detectors						819,342	819,342
Special Tactics Dismounted Operators Suite						691,988	724,988
Agile Combat Support							
C-130 Support Equipment						2,722,083	3,257,068
Satellite Communication Radio Support Equipment						454,000	460,963
Global Integrated ISR/Space Superiority/Cyberspace Superiority/C2/Incident Awareness and Assessment							
Cyber Modernization						1,589,000	1,144,679
Control and Reporting Center Equipment						2,389,075	2,389,075
Eagle Vision						16,973,236	16,952,768
Remote Piloted Aircraft Squadron Operations Center (RSOC)						4,100,000	4,869,827
RC-26B Modernization						200,000	192,914
Communications							
Joint Incident Site Communications Capability (JISCC)						17,000,000	17,000,000
Public Works and Engineering							
Potable Water Production and Prime Power						1,508,250	1,508,250
Explosive Ordnance Disposal (EOD) Equipment						0	5,878,763
Firefighting							
Fire Fighting Vehicles						8,157,376	8,428,772
Urban Search and Rescue Kits						7,113,488	7,113,488
Personal Protective Equipment Structural Firefighting						3,183,440	3,183,440
Firefighting Support Kits						1,560,000	970,370
Emergency Management							
Mobile Emergency Operations Center (MEOC)						7,535,778	7,535,867
Common Operating Picture (COP)						4,399,200	5,085,200
Liaison Command and Control Kit						830,027	830,027
Mass Care							
Disaster Relief Bed-Down Sets (DRBS)						1,057,901	0
Fatality Search and Rescue Team Equipment						3,568,936	3,568,936
Religious Support Team (RST) Equipment						100,000	83,072
Public Health							
Expeditionary Medical Support (EMEDS) Modernization						1,515,000	2,957,520
Total				**$262,322,000**	**$181,716,500**	**$315,000,000**	**$315,000,000**

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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 2016 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	Large Aircraft Infrared Countermeasures (LAIRCM) for KC-135, C-130J, EC-130J, C-17	405	234	$1,884,422	$440,954,748	Allows tankers, combat delivery, and special operations aircraft to survive attacks from rapidly proliferating shoulder-launched missiles.
2	F-16/F-15/A-10 Radar Warning Receiver (RWR) and Defensive Systems Upgrades	564	435	$1,211,217	$526,879,228	Replaces 130 non-sustainable F-15 RWRs with a more capable system fully compatible with the active electronically scanned array (AESA) radar. Replaces A-10 and F-16 block 30/32/42 legacy ALR-69 RWR that has overloaded processors that do not provide adequate response time or threat detection with new fully digital ALR-69A. Increases flare capacity on F-16 aircraft and provides pre-emptive flare capability for F-15C. Adds missile warning on F-16 aircraft. Adds ALQ-213 to F-16 Block 42 to integrate the aircraft electronic warfare and countermeasures systems.
3	Multi Mission Design Series (MDS) Real Time Information in Cockpit (RTIC) Data Link and Communications	176	176	$750,000	$132,000,000	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.
4	F-15/F-16 Sensor Upgrades	479	273	$1,073,260	$292,999,999	F-15 APG-63(V)3 replaces mechanically scanned radars with an active electronically scanned array (AESA) radar, which provides detection and tracking in multiple directions simultaneously and enables tracking of small asymmetric targets. Targeting pods require digital video output to display the full capability of the latest fourth generation forward-looking infrared (FLIR) and TV sensors to help determine potential enemy intent and minimize collateral damage and civilian casualties. Additional targeting pods are needed to maximize training efficiency.
5	HH-60 Situational Awareness Upgrade Kits	17	17	$4,160,888	$70,735,096	Hostile Fire Indicator provides aircrew warning and direction of small arms and rocket propelled grenade (RPG) fire. Helmet-mounted Cueing System and Point Designation provide the crew flight and survivor awareness. New radios enable communication with multiple agencies during domestic response.
6	Battlefield Airman Combat Equipment	1,019	453	$202,207	$91,600,000	Battlefield Airman includes Security Forces, Guardian Angels, Special Tactics, and Terminal Air Controllers. The items required include communication equipment, situational awareness equipment, personal protective equipment, night vision devices, weapons and weapons accessories, training devices, and explosive detection equipment.

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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	A-10 Situation Awareness Upgrade Kits	85	42	$554,286	$23,280,000	Color display unit allows displays full digital resolution of latest fourth generation targeting pod sensors to improve target identification and minimize collateral damage and civilian casualties. 3D audio reduces extraneous noise and radically increases the pilot's ability to process information coming simultaneously from multiple radios and threat warning systems. Anti-jam navigation system prevents sensor cueing errors in GPS jamming environment.
8	HC/LC-130 CNS/ATM Upgrade	16	16	$10,500,000	$168,000,000	Communication Navigation Surveillance Air Traffic Management (CNS/ATM) compliance by 2015 provides precision navigation, civil data link, enhanced surveillance, and addresses obsolescence issues.
9	E-8C Joint Surveillance and Target Attack Radar System (JSTARS) Global Integrated Intelligence, Surveillance, and Reconnaissance (ISR); Personnel Recovery (PR) Compatible Interrogation Radio; Integrated Broadcast Service (IBS) Modernization; Combat Identification (CID) Capability; Radio Calibration tools; and Multi-Agency Communication Capability	91	81	$417,418	$33,810,824	Provides overwatch to potentially hostile extraction areas via secure imaging, intelligence reports of electronic intelligence (ELINT), signals intelligence (SIGINT), and human intelligence (HUMINT) in support of target nomination and identification, CID to allow organic identification to multiple sensors on the aircraft permitting target quality identification to forces, and the ability for aircrew to calibrate multi-band radio systems after performing in-flight adjustments.
10	Advanced Simulators for F-16, C-130H/J, KC-135	31	25	$3,860,000	$96,500,000	With reduced flying hours and range limitations, ANG flying units will be unable to maintain full combat readiness without high fidelity tactical simulators.

III. Air Force Reserve Overview

A. Current Status of the Air Force Reserve

1. General Overview

Top AFR Equipping Challenges

- **Defensive Systems:** Risks to aircraft vulnerability/survivability during combat operations due to legacy defensive systems
- **Data Link and Secure Communications:** Non-standard airborne capabilities supporting image/video, threat updates, and communications for combat missions

The Air Force Reserve (AFR) has 34 flying wings with 30 unit equipped squadrons and 44 associate units. There are also eight 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 mission support units equipped and trained 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.

Included in the AFR inventory are 366 aircraft comprised of the A-10, B-52, C-5, C-40, C-17, C-130/HC-130/WC-130, 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 mobilization.

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), mobilization, 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 July 2014, the Secretary and Chief of Staff, United States Air Force released their 30-year strategy, calling for the Nation to pursue an ever-agile Air Force in order to provide Global Vigilance, Global Reach, and Global Power. It highlighted the rapid pace of change, and charged the Air Force with adapting and responding to meet our Nation's needs. 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. As its mission states, the AFR is an integrated, flexible combat-ready force providing accessible and sustainable capabilities as an Air Force Component supporting our National Security. Furthermore, 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) plays an important role in preserving and modernizing the critical resources of the AFR.

The AFR maintains a warfighter-driven requirements process that studies mission needs and solicits, validates, and prioritizes requirements proposals. These are then ranked with the Prioritized Integrated Requirements List (PIRL) and presented to the AFRC Commander for approval. The PIRL executable items then form the AFR Modernization List, which is 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 to maintain leading-edge combat capability. The appropriation bolsters recapitalization of critical Reserve Component (RC) equipment in the three major areas: mobility air forces (MAF), combat air forces (CAF), and Agile Combat Support (ACS). In FY 2012, the AFR used NGREA funds for several programs in support of A-10s, F-16s, C-130s, 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, on-board oxygen generation, and aircraft weapon delivery. C-130 upgrades included advanced communications, armor, crashworthy seats, and virtual training and data transfer modules. Other major NGREA expenditures included C-40 high speed data upgrades, trunk land mobile radios, F-16C Multi-Task Trainers, and simulator upgrades across various weapon systems.

The AFR is effectively addressing Congressional concerns with NGREA obligation rates that do not meet DOD 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 actively presenting three to five 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. In 2012, the AFR 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.

NGREA funds greatly support the AFR with maintaining and modernizing aging equipment. The Air Force Reserve has a successful record of effectively applying NGREA in the areas of MAF, CAF, and ACS to ensure the readiness of the Air Force Reserve combat capability.

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, classic associations, active associations, and Formal Training Units (FTU), 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 has C-5, C-17, C-130, KC-135, and C-40C units where they own and maintain 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 C-5 FTU, which supports aircrew training for the entire C-5 fleet. The AFR associates with the Active Component (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 Reliability Enhancement and Reengineering Program, 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.

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.

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 Dobbins ARB, Georgia; Maxwell AFB, Alabama; Little Rock AFB, Arkansas; Niagara Falls Air Reserve Station (ARS), New York; Pittsburgh International Airport (IAP) ARS, Pennsylvania; Pope Army Airfield, North Carolina; Youngstown ARS, Ohio; Minneapolis-St Paul IAP ARS, Minnesota; and 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-130H include large aircraft infrared countermeasures (LAIRCM), 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. The AFR HC-130 fleet is also modernizing its communications, navigation and surveillance capabilities to meet future air traffic management and flight safety standards, a top AFR priority.

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 aircraft at the 403rd Air Mobility Wing, Keesler AFB, Mississippi. It supports ground operations through the delivery of paratroopers and equipment to austere runways at forward bases. The C-130J conducts humanitarian relief missions and can be used for medical evacuations. The AFR's 53rd Weather Reconnaissance Squadron maintains WC-130Js at Keesler AFB, Mississippi, to provide ongoing Hurricane Hunter support to National Hurricane Hunter and National Winter Storm operation plans. The unique mission profiles flown by the WC-130Js revealed a critical satellite phone communication capability shortfall that has been addressed and will be completed with the reallocation of FY 2013 NGREA funds. These aircraft will also need

modernization of communications, navigation, and surveillance capabilities to meet future air traffic management and flight safety standards.

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.

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. FY 2012 NGREA funded the C-40C High Speed Data.

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. Existing future modernization requirements for the B-52 include installation of Digital Mission Data Recorders (currently unfunded) and modifications to the LITENING Advanced Targeting Pod (ATP) through a spiral upgrade process (partially funded with FY 2013 and FY 2014 NGREA funding) in order to maintain training and combat effectiveness throughout the modification.

The A-10 Thunderbolt II is an Air Force ground attack fighter, one of several which provide close air support. The 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 are also receiving 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. The AFR F-16s receive NGREA funded smart display, helmet-mounted targeting, advanced identification friend foe equipment, and additional ARC-210 radio during scheduled 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; and a new radar processor that improves reliability and performance with minimal integration and installment. Radar repair purchasing costs 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 at Patrick AFB, Florida, and at the 943rd Rescue Squadron at Davis-Monthan AFB, Arizona. AFR HH-60G Pave Hawk search and rescue helicopters have 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 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 affect the recovery of downed aircrews or other isolated personnel from hostile or denied environments during war. They may provide air refueling of recovery force helicopters and tactical delivery via airdrop or airland 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 propeller system upgrades.

Guardian Angel (GA) is an Air Force weapon system consisting of combat rescue officers; pararescuemen; 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, as an AF core function, supports and enables all other Air Force core functions. The AFR provides that deployable combat support 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
- 27 percent of the AF's Rapid Engineer Deployable Heavy Operations Repair Squadron Engineers (RED HORSE) heavy construction capability
- 13 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.

The AFR used FY 2012–FY 2014 NGREA funding to procure support equipment that significantly enhanced security forces, flight line maintenance, munitions, and inspection assets. These NGREA funds assisted with standardizing security forces tactical training equipment and maintaining compliance with evolving aircraft and munitions maintenance standards.

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. In addition to vehicle requirements to support continental U.S. base operations, past NGREA investments have supported procurement of Unit Type Code tasked and tactical training vehicles that enable Selected Reserve civil engineering personnel to attain and maintain qualification on expeditionary 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 for FY 2014 and FY 2015 is $32M as of July 2014.

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 10 years for the C-40Cs to 55 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, 2014.

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-130, 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, AFRC is tracking any un-commanded rudder movements for a KC-135 fleet-wide study of aircraft Dutch Roll anomalies. AFRC has had three KC-135 anomalies since the loss of the Air Mobility Command (AMC) KC-135 in May 2013. The entire C-130 fleet experienced a Bleed

Air Duct part failure that drove a one-time compliance technical order inspection that resulted in insufficient parts. Workarounds were developed to bring aircraft back to mission capable status.

For the CAF equipment, AFRC 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. Legacy HC-130 aircraft are scheduled to be replaced over the next eight years.

e. 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 AFR corporate process and the AFR FY 2015 Equipment Modernization List.

Modernization of aircraft is required to maintain or reverse degraded capabilities due to materiel age or 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, rotor brakes, and Guardian Angel equipment. These efforts directly address capability shortfalls identified by theater combatant commanders during combat operations.

LAIRCM are necessary to provide an integral self-protection system that also complements flare-based defensive systems currently used and provides 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 is the AFR's number two priority in FY 2014.

The AFR will continue to equip C-130s in FY 2015 with the Real Time Information in the Cockpit (RTIC) data link system. These are upgrades with 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-130 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 for FY 2014 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-130 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-130s and HC-130s require upgraded propeller systems to increase aircraft maintainability, survivability, and performance. The AFR will allocate NGREA funding to install modern high-performance propellers, propeller control systems, and in-flight propeller balancing systems for 48 aircraft starting in FY 2015 to increase engine efficiency, decrease sustainment costs, and increase mission capable rates.

AFR F-16s receive smart display; helmet-mounted targeting, advanced identification, friend or foe equipment; and a second ARC-210 radio during scheduled depot maintenance. The additional ARC-210 radio provides simultaneous SLOS/BLOS communication. These programs are ongoing and will require additional funding to complete.

AFR A-10s need critical cockpit modernization of avionics and displays, a jam-resistant GPS/INS, and an improved electronic warfare defensive suite. However, these programs are currently unfunded due to projected A-10 retirement in FY 2019. A-10s are receiving helmet-mounted targeting, LARS-v12 combat search and rescue radio, and On Board Oxygen Generation System during scheduled depot inductions. No further funding is required for LARS v12 or Pave Penny removal, but 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. With the G4 configuration upgrade being 94 percent complete, the AFR will begin upgrading their pod inventory to the Sensor Enhanced configuration in 2015. The AFR will allocate NGREA funds towards its G4 pods for the LITENING Digital Port (LDP) upgrade to enhance the quality of video and speed of processing capability. LDP will 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. Legacy equipment is no longer supportable due to a lack of repair sources. Without a sustainable recorder, B-52 crews must often fly missions without recording capability. 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 early 2015.

AFR GA units require unique, often unfunded, training equipment for use in extreme climates, intensive training scenarios, or contingency operations. Ongoing NGREA funded programs include equipment modernization for short-wave infrared night vision devices, weapons accessories, communication equipment, replacements for rigged alternate method zodiac drop packages, 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 five 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 and prevent additional rotor spin on a ship's deck and increase safety for ground personnel from spinning rotor blades during maritime operations. FY 2013 NGREA funds have been allocated to this program for upgrade of 15 HH-60G aircraft starting in FY 2015.

Finally, the AFR support equipment has a current shortfall of approximately $115M for sustainment across all functional areas within the command. Assets required include maintenance stands, 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 2014 President’s Budget plans to reduce the AFR by another 10 aircraft in Mississippi. These actions reduce the AFR inventory by 71 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 six AFR C-130 aircraft, five at the 910th Airlift Wing and one at the 914th 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 RTIC program is delayed due to kit-proof failure (November 2009). A modified contract is pending, and kit-proof is

scheduled for November/December 2014. Full-rate production will follow sometime thereafter.

- The C-40C aircraft have been modified with High Speed Data systems. C-40Cs now provide the highest ranking government and DOD personnel one of the tools necessary to effectively conduct business in today's corporate/government environment.

- AFR has fielded the Virtual Electronic Countermeasure System (VECTS). VECTS provides realistic in-flight electronic countermeasure training events. The realism of the threat indications and evaluation of aircrew responses allows greatly improved aircrew training for threat reaction during actual threat environment operations.

- 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 November 2016. The AFR Simulator and DMO program also made advancements in HH-60G Pave Hawk simulator procurement by purchasing a Pave Hawk Equivalent Distributive Repeatable Operational Simulator 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 A-10Cs will also receive the Lightweight Airborne Radio System Version 12 (LARS v12) upgrade in two Full Mission Trainers in the 442nd Fighter Wing, Whiteman AFB, Missouri, which will provide a quantum leap in downed aircrew search and rescue capability. The LARS v12 upgrade was fully funded in May 2013.

- The A-10/F-16 HMIT entered production in 2012, and A-10 installs began in December 2012, and F-16 HMIT installs began in June 2013. These programs are ongoing and will require additional funding to complete.

- 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 ATP capability. While at the depot, the obsolete Pave Penny system will also be removed to open up space in the avionics bay, reduce aircraft drag, and save money and time by eliminating future system maintenance. No further funding is required for LARS v12 or Pave Penny removal.

- 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.

- Contract Award for the procurement of 12 new LITENING Advanced Targeting Pods-Sensor Enhanced (ATP-SE) for CAF aircraft occurred in September 2013. The 12 new SE pods are expected to be delivered in the November 2014–April 2015 timeframe. The total cost for this effort includes cost for new pods, spares and containers, activation, and one month of interim contractor support before transitioning to organic depot support. Four remaining Block One to G4 upgrades and the first phase of G4 to SE upgrades are scheduled for contract award in September 2014. The AFR is anticipating merging this buy with the ANG to meet minimum buy quantity pricing. Following this buy, the G4 to ATP-SE kit upgrades are expected to begin in FY 2015 (partially funded with FY 2013 and FY 2014 NGREA, and additional funding needed to complete G4 to SE upgrades).

C. Future Years Program (FY 2016–FY 2018)

1. FY 2018 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2016–FY 2018 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 2016 President's Budget request. *Table 4 NGREA Procurements* provides AFR planned NGREA procurements for FY 2013–FY 2015.

3. Anticipated Transfers from AC to AFR

Table 5 Projected Equipment Transfer/Withdrawal Quantities lists planned AFR transfers for FY 2016–FY 2018.

4. Anticipated Withdrawals from AFR Inventory

Table 5 also lists planned AFR major equipment withdrawals for FY 2016–FY 2018, 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 2018

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

The AFR continues to engage globally, side-by-side with the Active and Guard Components, responding to national crises and steady-state missions. To this end, the AFR maintains and enhances its capability through modernization of training and mission platforms as well as installation sustainment. This is even more important as the threat of sequestration and other budget considerations potentially drive new system acquisitions further into the future, resulting in the demand to upgrade and sustain AFR legacy systems. The AFR receives modernization funding through two primary sources, the Air Force Budget and NGREA, along with any Congressional funding additions.

With the tighter fiscal environment upon us, and the legacy weapon systems we operate as an essential element of the Total Force, the AFR continues to rely heavily on NGREA, and is committed to improving NGREA obligation rates and accelerating delivery of critical capabilities to its Airmen. The AFR uses NGREA funding to maintain a relevant combat force ready for immediate employment. Our focus is on improving combat lethality by integrating sensors and precision weapons; improving survivability by modernizing defensive systems; and improving aircrew situational awareness by improving communications and data links.

High-cost, high-priority requirements looming in the near future such as compliance with mandated national and international CNS/ATM standards will consume large portions of AFR's procurement funding. Critical combat capabilities must be postponed until future years or be purchased in reduced uneconomical quantities over several years. The AFR will emphasize those requirements that provide the best combat return but will be unable to maintain the fleet to our current standards.

The AFR continues to work with partner commands, particularly ACC and AMC, to ensure requirements are fully defined prior to allocating NGREA funds. The AFR is also proactively working with AFMC to improve overall acquisition planning and execution. While the AFR continues a path of improvement, persistent planning and communication bears fruit for improved AFR program NGREA obligation rates.

AFR

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 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
Air Refueling							
Air Refueling, KC-135R	KC-135R	$74,000,000	62	70	70	74	74
Air Support							
Weather, WC-130J	WC-130J	$73,800,000	10	10	10	10	10
Airlift							
Airlift, C-130H	C-130H	$39,600,000	56	56	56	56	56
Airlift, C-130J	C-130J	$73,800,000	10	10	10	10	10
Airlift, C-17A	C-17A	$281,200,000	18	18	18	18	18
Airlift, C-5A	C-5A	$205,100,000	6	0	0	0	0
Airlift, C-5B	C-5B	$235,300,000	13	5	0	0	0
Airlift, C-5M	C-5M	$328,000,000	10	16	16	16	16
Airlift, C-40C	C-40C	$80,700,000	4	4	4	4	4
Bomber							
Bomber, B-52H	B-52H	$99,000,000	18	18	18	18	18
Fighter							
Fighter, A-10C	A-10C	$13,500,000	55	55	55	28	28
Fighter, F-16C	F-16C	$21,600,000	54	54	54	77	77
Fighter, F-16D	F-16D	$21,000,000	2	2	2	2	2
Rescue							
Rescue, HC-130N	HC-130N	$23,000,000	1	1	1	1	1
Rescue, HC-130P	HC-130P	$23,000,000	5	5	5	5	5
Rescue, HH-60G	HH-60G	$27,000,000	16	16	16	16	16

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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 2015.

Nomenclature	Equip No.	Average Age	Remarks
Air Refueling			
Air Refueling, KC-135R	KC-135R	55	
Air Support			
Weather, WC-130J	WC-130J	18	
Airlift			
Airlift, C-130H	C-130H	26	
Airlift, C-130J	C-130J	13	
Airlift, C-17A	C-17A	15	
Airlift, C-5A	C-5A	46	
Airlift, C-5B	C-5B	29	
Airlift, C-40C	C-40C	10	
Bomber			
Bomber, B-52H	B-52H	55	
Fighter			
Fighter, A-10C	A-10C	36	
Fighter, F-16C	F-16C	29	
Fighter, F-16D	F-16D	29	
Rescue			
Rescue, HC-130N	HC-130N	46	
Rescue, HC-130P	HC-130P	52	
Rescue, HH-60G	HH-60G	25	

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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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018
Modification of Inservice Aircraft			
B-52	$14,112,000	$15,240,000	$6,869,000
C-17A	346,000	3,467,000	7,639,000
C-40	1,200,000		
C-135	7,927,000		
H-60	4,590,000		
Vehicular Equipment			
Passenger Carrying Vehicles	52,000	125,000	126,000
Medium Tactical Vehicles	1,377,000	1,222,000	1,245,000
Items Less Than $5M (Cargo and Utility Vehicles)	2,665,000	2,962,000	3,017,000
Items Less Than $5M (Special Purpose Vehicles)	3,477,000	2,970,000	2,158,000
Items Less Than $5M (Materials Handling Equipment)	2,962,000	2,711,000	2,823,000
Runway Snow Removal and Cleaning Equipment	165,000	60,000	61,000
Items Less Than $5M (Base Maintenance Support)	302,000	318,000	324,000
Electronics and Telecommunications Equipment			
Air Traffic Control and Landing System	388,000		
AF Global Command and Control System	99,000	101,000	103,000
Theater Battle Management Command and Control System	145,000	145,000	145,000
Air and Space Operations Center - Weapon System	1,168,000	1,203,000	1,239,000
Information Transport Systems	11,853,000	10,115,000	3,761,000
Tactical Communications-Electronics Equipment	65,000	67,000	69,000
Base Communications Infrastructure	326,000	333,000	339,000
Communications and Electronics Modifications	388,000		
Other Base Maintenance and Support Equipment			
Night Vision Goggles	239,000	140,000	142,000
Items Less Than $5M (Personal Safety and Rescue Equipment)	3,022,000	2,887,000	2,938,000
Mechanized Material Handling Equipment	345,000	284,000	290,000
Base Procured Equipment	127,000	102,000	104,000
Items Less Than $5M (Base Support Equipment)	139,000	139,000	117,000
Total	**$57,479,000**	**$44,591,000**	**$33,509,000**

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015[1]
FY 2013 NGREA Equipment			
LITENING Targeting Pod Procurement & Spiral Upgrades	$54,499,947		
Simulators	14,656,934		
C-130 Modular Aerial Spray System (MASS)	8,000,000		
C-130 Electronic Propeller Control System (EPCS)	8,843,717		
C-130 Secure Line-of-sight/Beyond Line-of-sight (SLOS/BLOS) Capability	627,158		
C-130 Yoke-mounted Switch	250,000		
HC-130 Hostile Fire Indication System (AAR-47 BV2 Missile Warning System)	1,500,000		
HC-130 Information Superiority	750,000		
WC-130J Satellite Communications (SATCOM)	60,719		
KC-135 Large Aircraft Infrared Countermeasures (LAIRCM)	7,034,826		
HH-60 Communications Suite Upgrade	6,930,335		
HH-60 Smart Multifunction Color Display (SMFCD) / Situational Awareness Data Link (SADL)	195,858		
A-10/F-16 Helmet-mounted Integrated Targeting (HMIT)	5,499,999		
A-10/F-16 Cockpit Modernization	5,049,957		
A-10 Parking Brake/Night Vision Imaging System (NVIS) Landing Light	1,222,449		
A-10 On Board Oxygen Generation System (OBOGS)	1,388,181		
A-10 Lightweight Airborne Radio System (LARS) V12	482,615		
F-16 ALR-69A Radar Warning Receiver (RWR)	2,757,570		
F-16 2nd ARC-210 Digital Receiver-Transmitter	1,931,654		
F-16 Pylon Integrated Dispenser System plus Infrared Missile Warning System (PIDS+)	2,000,000		
F-16 Advanced Identification, Friend or Foe (AIFF)	625,158		
B-52 Mission Data Recording System	100,000		
Chief Information Officer (CIO) Board Project List	3,000,000		
Support Equipment	1,700,262		
Guardian Angel Tactical Equipment	498,504		
Vehicles	294,743		
Security Forces Tactical Equipment Purchases	99,414		
FY 2014 NGREA Equipment			
Electronic Propeller Control System (EPCS)		$21,437,975	
KC-135 Large Aircraft Infrared Countermeasures (LAIRCM)		10,245,711	
LITENING Targeting Pod Procurement & Spiral Upgrades		8,206,422	
C-130 Large Aircraft Infrared Countermeasures (LAIRCM)		5,000,000	
C-130 Modular Aerial Spray System (MASS)		3,600,000	
C-130 Secure Line-of-sight/Beyond Line-of-sight (SLOS/BLOS) Capability		420,025	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Nomenclature	FY 2013	FY 2014	FY 2015[1]
HH-60 Blue Force Tracker & Remotely Operated Video Enhanced Receiver (ROVER)		4,500,000	
HH-60 Tactical Situational Awareness Data Link (SADL)		300,000	
Day/Night Helmet Mounted Integrated Targeting (HMIT)		1,800,000	
A-10/F-16 Digital Intercom/Spatial Awareness Audio		1,334,000	
Electronic Warfare Missile Warning System - Pylon Integrated Dispenser System (PIDS+)		1,243,700	
Combined Advanced Identification Friend or Foe (AIFF) with Mode 5/S		2,362,200	
Cockpit Modernization		2,000,000	
F-16 Radio (2nd ARC-210)		780,000	
Chief Information Officer (CIO) Board Project List		4,469,967	
Guardian Angel Personnel Recovery Mission Equipment		2,000,000	
AFR Expeditionary Security Forces Tactical Equipment		100,000	
Support Equipment		100,000	
Vehicles		100,000	
Total	**$130,000,000**	**$70,000,000**	

1. Service FY 2015 NGREA equipment list was not available in time for publication in the NGRER. Equipment list for FY 2015 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 2016 Qty	FY 2017 Qty	FY 2018 Qty	Remarks
Air Refueling					
Air Refueling, KC-135R	KC-135R	+8		+4	Beale standup; increase Tinker Primary Authorized Aircraft (PAA)
Airlift					
Airlift, C-5A	C-5A	-6			Aircraft retirements
Airlift, C-5B	C-5B	-8	-5		Conversions to C-5M model
Airlift, C-5M	C-5M	+6			Conversions from C-5A/B models
Fighter					
Fighter, A-10C	A-10C			-27	
Fighter, F-16C	F-16C			+23	

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
FY 2012 Planned Transfers & Withdrawals							
Air Support, MC-130E	MC-130E	-2	-5				
FY 2012 P-1R Equipment							
Modification of In-service Aircraft							
B-52				$8,771,000	$15,456,000		
A-10				28,300,000	0		
F-16				943,000	39,000		
C-5				2,032,000	109,187,000		
C-17A				1,161,000	0		
C-130				64,458,000	9,370,500		
C-130J Mods				4,830,000	0		
C-135				461,000	496,000		
H-60				3,565,000	2,039,000		
Aircraft Replacement Support Equipment				0	6,110,000		
Vehicular Equipment							
Passenger Carrying Vehicles				1,217,000	470,000		
Medium Tactical Vehicles				350,000	94,000		
Items Less Than $5M - Cargo & Utility Vehicles				1,031,000	0		
Security and Tactical Vehicles				994,000	20,000		
Items Less Than $5M - Special Purpose Vehicles				2,183,000	0		
Items Less Than $5M - Materials Handling Equipment				771,000	0		
Firefighting/Crash Rescue Vehicles				0	3,930,000		
Runway Snow Removal and Cleaning Equipment				469,000	725,000		
Items Less Than $5M - Base Maintenance Support Vehicles				121,000	0		
Electronics and Telecommunications Equipment							
Air Traffic Control & Landing System				745,000	0		
National Airspace System				5,256,000	4,210,000		
AF Global Command & Control System				238,000	0		
Theater Battle Management C2 System				400,000	400,000		
Air & Space Operations Center Weapon System				2,818,000	0		
Base Information Infrastructure				1,600,000	0		
Tactical C-E Equipment				3,859,000	7,914,000		
Base Communications Infrastructure				339,000	263,000		

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Table 6

FY 2012 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual
Other Base Maintenance and Support Equipment							
Night Vision Goggles				150,000	0		
FY 2012 NGREA Equipment							
F-16 Advanced Identify Friend/Foe (IFF)						$13,630,000	$8,082,595
Chief Information Officer (CIO) Board Project List						10,495,982	6,442,532
C-130 Electronic Propeller Control System (EPCS)						8,202,966	0
C-130 Modular Airborne Spray System (MASS)						8,000,000	0
C-40 High Speed Data						6,880,538	6,880,538
A-10 On Board Oxygen Generating System (OBOGS)						5,100,000	3,150,283
C-130 Secure Line-of-Sight/Beyond Line-of-Sight (SLOS/BLOS) capability						4,811,045	4,245,117
A-10 Lightweight Airborne Recovery System (LARS) V12						4,200,000	4,859,786
A-10/F-16 Cockpit Modernization (Includes A-10/F-16 Center Display)						3,400,000	14,871,192
Vehicles						3,028,467	3,033,753
A-10/F-16 Day/Night Helmet Mounted Integrated Targeting (HIMIT)						1,981,973	2,226,552
C-17 C-130 Interphone for Loadmaster/Scanner						1,678,719	3,175,984
Support Equipment						1,604,555	816,494
F-16 Commercial Fire Control Computer (CFCC)						1,485,755	2,869,790
C-130 Virtual Electronic Combat Training System (VECTS)						500,000	450,000
Simulators						0	11,396,776
Large Aircraft Infrared Countermeasures (LAIRCM)						0	2,498,609
Total				**$137,062,000**	**$160,723,500**	**$75,000,000**	**$75,000,000**

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 2016 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 (Engine Display/Automatic Dependent Surveillance-Broadcast [ADS-B] Out)	56	56	$3,000,000	$168,000,000	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 Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM) requirements. Without these modifications AFR C-130s will not be in compliance with International Civil Aviation Organization (ICAO) mandated 2020 requirements
2	C-17 Extended Range (ER)/ On Board Inert Gas Generating System II (OBIGGS)	2	2	$10,000,000	$20,000,000	Modification allows the aircraft to carry an additional 65,000 pounds of fuel and fly and 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.
3	Guardian Angel Personnel Recovery Mission Equipment	various	various	various	$7,000,000	Capabilities shortfall mission equipment purchase and technical refresh of on-hand equipment used in the personnel recovery mission to include advanced rescue craft, sonar, environmental ensemble, parachute modernization, and mission data management
4	HH-60 Rotor Brake	15	15	$333,000	$4,995,000	Funds HH-60 rotor brakes required for safe ground operations by reducing rotor slow-down time. Operation Unified Protector and strategic guidance have demonstrated an increased propensity to operate off floating platforms with associated confined spaces and safety concerns.
5	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 systems 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.
6	HH-60 Improved Radar Warning Receiver (RWR) / Radio Frequency (RF) Jammer APR-39 DV2	15	15	$133,000	$2,000,000	Purchases a Radar Warning Receiver/ RF Jammer for each AFR HH-60 aircraft. Without a Modernized Integrated Electronic Warfare System there is an increased chance that Combat Search and Rescue (CSAR) HH-60G crews and aircraft will be lost to enemy hostile engagements.
7	HH-60 Hostile Fire Indication System	15	15	$266,667	$4,000,000	Upgrade to Air Combat Command (ACC) 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.
8	C-130 Next Gen Missile Warning System Upgrade	58	58	$1,000,000	$58,000,000	Upgrade of 1970s era or addition of digital Missile Warning System. Air Force program of record is ALR-69A. This system is also being installed on the KC-46A and being looked at for the F-16C, A-10, and HC-130P/N aircraft.

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Table 8

Significant Major Item Shortages

PR	Nomenclature	Total Req'd	# Items Short	Item Cost	Total Shortage Cost	Rationale/Justification
9	C-130 Modular Aerial Spray System (MASS)	6	5	$4,800,000	$24,000,000	Replaces the current MASS with a newly designed system. The current MASS is no longer in production and becoming increasingly more difficult and expensive to maintain. The new system is required to meet current and future aerial spray applications directed by the Center for Disease Control, homeland defense, and DOD requirements.
10	C-130 Improved Night Vision Imaging System (NVIS) Cockpit Lighting	56	56	$1,000,000	$56,000,000	Currently AFR C-130H2/2.5 aircraft have an NVIS wiring harness that was intended to be a temporary fix until the Avionics Modernization Program (AMP) was installed. With the future of the AMP program in jeopardy, a permanent NVIS solution needs to be installed. Due to increased night vision goggle (NVG) requirements and operational necessities, the wiring harness solution is no longer valid and aircrews require a better permanent solution. C-130s are being tasked to operate in an environment of increasing levels of threat complexity and lethality. Failure to modify the C-130 aircraft with NVG-compatible aircraft lighting renders combat airlift incapable of meeting user demands to operate at night in a tactical environment.

Chapter 6
United States Coast Guard Reserve

I. Coast Guard Overview

America's enduring maritime interests—its reliance on the seas for commerce, sustenance, and defense—has changed little since colonial days. The United States Coast Guard (CG) exists to uphold and protect these interests. As one of the five Military Services which make up the Armed Forces of the United States, the CG defends and preserves the United States as a free nation. We protect important national interests—the personal safety and security of the people; our Nation's territorial integrity; its natural and economic resources; critical infrastructure; and the U.S. Marine Transportation System—from all threats, internal and external, natural and manmade. As an integral part of the Department of Homeland Security (DHS)—led comprehensive emergency management system, the CG fulfilled an expanded role in response operations during Hurricanes Katrina and Rita in 2005, the 2010 Haiti earthquake, the Deepwater Horizon oil spill, and other natural and man-made disasters. Table 6-1 provides an overview of six overarching DHS programs and the CG 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 CG 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 CG is uniquely positioned to conduct defense operations in support of Geographic Combatant Commanders (GCCs). The CG supports our Department of Defense (DOD) partners by performing rotary-wing air intercept operations and providing assets to work with U.S. Naval Forces. In direct support of DOD's theater security cooperation efforts, the CG conducts port operations, maritime intercept operations, and the training of international partners. The CG's global missions in support of GCC operational plans leverages its primary expeditionary resource—eight CG Port Security Units (PSUs) that operate under the Navy Expeditionary Combat Command and are often embedded within the Navy's Coastal Riverine Force (CRF). These CG PSUs are unique because they are principally Reserve-staffed units, consisting of only six Active Component (AC) personnel within a 150 total complement.

The Mobile Support Units (MSUs), also primarily staffed with Reservists, are responsible for logistical support operations anywhere in the world where CG 110' Island Class cutters are involved, such as current operations with Patrol Forces Southwest Asia, Bahrain. MSUs are air, sea, and land deployable within 96 hours of mobilization in support of outside the continental United States (OCONUS) contingencies, CG patrol boat missions, and DHS continental United States (CONUS) emergencies. MSUs are capable of deployment within 25 days for support to other types of missions. The MSUs are capable of expanding its inventory and support capability to support as many CG patrol boats as are committed.

A. Coast Guard Planning Guidance

The full spectrum of CG operations are executed through the Prevention–Response operating concept to prevent, protect against, respond to, and recover from maritime incidents. The CG's distinct blend of authorities, capabilities, competencies, and partnerships provide the President, Secretary of Homeland Security, Secretary of Defense, and other national leaders with the capabilities to lead or support a range of operations to ensure safety, security, and stewardship in the maritime domain.

The interrelated nature of the CG's missions and culture of adaptability provides the CG with the ability to rapidly shift from one mission to another as national priorities demand. The true value of the CG to the Nation is not in its ability to perform any single mission, but in its versatile, highly adaptive, multi-mission character.

B. Coast Guard Equipping Policy

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

The CGR utilizes specific equipment while performing defense operations in support of overseas contingency operations (OCO) that DOD funded through the OCO budget allocation to the CGR. This equipment includes boats, spare parts, communications gear, and other special purpose equipment (personnel protective equipment, ISU-90 shipping containers, uniforms, etc.) that are interoperable with the U.S. Navy and allied forces and meet DOD requirements. The CGR primary end users of DOD OCO-funded equipment are the eight PSUs, which deploy in support of the GCCs on a rotating basis, or in response to major world events involving our Nation's Armed Forces.

C. Plan to Fill Mobilization Shortages in the RC

In FY 2014, approximately 450 Selected Reserve (SELRES) personnel were mobilized in support of OCO, compared to 935 in FY 2013. The completion of the military outload mission accounts for the reduction in mobilizations. The majority of mobilized personnel served as members of PSUs operating OCONUS in support of GCC operations.

The CGR is reliant on equipment funding from the AC to remain an operational force ready to perform and sustain CG missions. After the 9/11 terrorist attacks, the RC expanded operations in support of GCCs with OCO funding. In recent years, facing growing reductions in the RC appropriation, yet maintaining a steady OCONUS operational tempo, the RC has been forced to leverage OCO funding to provide adequate training opportunities for Reservists. This diminishing funding stream, coupled with deeper cuts to the Reserve appropriation, may degrade the CGR's ability to achieve sufficient readiness and competency measures.

The CGR reduced total end strength by 8 percent in FY 2014 and forecasts a reduction of 15 percent by the end of FY 2015. Consequently, consideration must be taken in planning towards future budget years to preserve resources for sufficient training and to prevent a "hollow force" that would be unprepared to respond to contingencies.

D. Initiatives Affecting RC Equipment

The PSUs and MSUs maintain a constant state of readiness to deploy for "all threats and all hazards" in support of the GCCs as well as CG port security missions. Their ability to deploy is dependent on the availability of AC and DOD-funded training platforms and equipment for operations. For the CG to sustain and support DOD efforts, additional funding is required to secure additional Reserve training platforms.

Since 2003, the CG has supported DOD's redeployments from Afghanistan and Iraq using Redeployment Assistance and Inspection Detachment (RAID) teams, comprised of members from both the Reserve and Active Components. RAID teams are deployed overseas to prepare, inspect, and placard military equipment and shipping containers before return shipment to the United States or other locations. The RAID teams will continue to be an important asset to DOD by providing shipping expertise for part of FY 2015; however, at the request of DOD, the CG will cease operations during FY 2015 and will not require future funding of the current missions in the Middle East. Future GCCs may seek to recall this expertise in future operations to minimize costs of redeploying units by reducing frustrated and associated cargo. The training and equipping of these teams is dependent on OCO funding.

The AC and RC are currently working together on the Boat Forces Reserve Management Plan. This new initiative is a four year plan that better aligns positions with training capacity and will support mobilization readiness for Boat Forces Reservists. The initiative clearly defines readiness requirements, standardizes Reserve personnel allowance lists at stations, and introduces new Boat Forces Reserve competencies to ensure reservists are ready and capable to effectively conduct boat operations in support of CG missions.

Approximately 82 percent of the SELRES force is directly assigned to AC units. These Reservists train and perform their duties alongside AC personnel, executing daily operations to meet CG missions. The remaining 18 percent are assigned to CG Deployable Specialized Forces, e.g., PSUs or DOD units. The GCC contingency plans validate requirements for deployable CG units. These units include PSUs, RAID teams, Strike Teams, MSUs, and the Navy's CRF.

II. Coast Guard Reserve Overview

A. Current Status of the Coast Guard Reserve

1. General Overview

Top Coast Guard Reserve Equipping Challenges

- All terrain vehicles/towing capacity
- Communications equipment—compatibility with DOD forces
- MSU/PSU logistical support and tactical equipment

The Reserve Force provides critical competencies vital to the CG'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 CG statutory missions. The CG 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 7,500 funded billets or positions, which is approximately 20 percent of the CG's total force strength. The CG Reserve Training Appropriation for FY 2014 provided $120M 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 2016–FY 2018. 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).

25' TPSB, Generation III

32' TPSB, Generation IV

Coast Guard PSUs operate the TPSB for defense operations providing waterborne security and point defense operations. The CG operates 52 Generation IV TPSBs at the PSUs and at the Special Missions Training Center (SMTC) in Camp LeJeune, North Carolina. Additionally, the SMTC maintains six Generation III TPSBs as training platforms.

25' RB-S, Generation I

29' RB-S, Generation II

The RB-S serves as a mobilization platform for Reservists assigned to CG stations throughout the Nation and to domestic military out load security operations involving the protection of DOD high-value assets. The CG continues recapitalization of its RB-S fleet with production of the 29' RB-S (Generation II). There are 360 RB-S boats assigned to Boat Stations, Maritime Safety and Security Teams, and Marine Safety Units throughout the CG.

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 2015.

c. Compatibility of Current Equipment with AC

PSUs are primary inshore/harbor surface interdiction response assets that conduct the overseas Naval Coastal Warfare mission 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, making them 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 Generation IV TPSB is a recently introduced and more complex platform than the legacy Generation III TPSB. As such, long term maintenance requirements and common failures as a result of extended use may not yet be fully realized.

e. Modernization Programs and Shortfalls

The CG 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 CG Small Boat Product Line continues working toward fully integrated logistics support for the TPSB Generation IV and RB-S Generation II boat platforms. Integration is expected to be complete by March, 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.

The procurement of modernized communications kits has substantially enhanced interoperability with DOD partners by providing access to secure and non-secure data encryption. Program elements maintain these kits and assign them to the units on an as-needed basis. Additional communications kits are needed to meet operational plans. Some engineering issues must be overcome, but we anticipate that the TPSBs communications suites will be fully upgraded in FY 2015. Additionally, the PSU community is conducting replacement of very high frequency (VHF) and ultrahigh frequency (UHF) radios on the TPSBs with a single Unity radio capable of transmitting and receiving on both frequencies. This procurement has already been made and installation is currently being prototyped. Upgrades are anticipated to occur throughout the fleet in FY 2015.

f. Overall Equipment Readiness

The CG Reserve has made strides in the PSU community to recapitalize and upgrade major equipment systems; however a high operating tempo over the last thirteen years, both in support of GCCs OCONUS and in response to CONUS contingencies, has created a need to replace aging and rapidly degrading equipment. Examples include the recapitalization of vehicles approaching end of lifecycle, all terrain forklifts, and additional secure communications suites. Additionally, the PSU program is in the early stages of the TPSB Generation IV lifecycle. 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 due to the minimal number of training days allotted per month/year.

B. Changes since the Last NGRER

The Reserve Training Appropriation was reduced from $131.4M in FY 2013 to $120M in FY 2014. Appropriation funding decreases negatively impact RC training opportunities to ensure that Reservists can proficiently operate the equipment included in this report.

In FY 2014, the SMTC disposed of twenty Drash shelters. The PSUs procured 116 tent shelters and upgraded their hand-held field and boat radios. The MSU procured two 20'x8' CONEX boxes and disposed of an outdated forklift, tents, and portable water tanks (potable and non-potable).

C. Future Years Program (FY 2016–FY 2018)

1. FY 2018 Equipment Requirements

Table 1 Consolidated Major Item Inventory and Requirements provides projected FY 2016–FY 2018 inventories and requirements for major equipment. All equipment is procured and accounted for by the AC.

2. Anticipated New Equipment Procurements

The MSUs intend to procure two portable satellite communications kits at a cost of $5K each. These communication kits will connect the MSUs to the CG Data Network while deployed, when no other communication links are available, enabling them to leverage existing logistics support systems. Additionally, the kits allow for voice communications beyond the cellular and UHF communications currently utilized during deployments, often to remote locations.

3. Anticipated Withdrawals from RC Inventory

None to report.

4. Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2018

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

CG 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 four-year cycle, which provides the unit enough funding to fully outfit each member with new/serviceable equipment at the end of a four-year period. The four-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 62 percent, of the RC have mobilization requirements that require PPE to safely conduct CG operations. The annual shortfall in PPE for RC personnel is estimated to be approximately $776K.

Table 6-2 provides the FY 2015 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 CG operations to achieve and maintain their mobilization competencies. FY 2015 PPE funding is based on a four-year replacement cycle.

Table 6-2. Coast Guard FY 2015 PPE Funding for the RC

Unit/PPE Type	Cost	# of Personnel	Total	Total/Year
Ashore (Reserve) Basic Ensemble (Boat Station)	$1,620	1,853	$3,001,860	$750,465
Ashore (Reserve) Cold Ensemble (Boat Station)	$1,490	1,302	$1,939,980	$484,995
Ashore (Reserve) Basic Ensemble (Aids to Navigation Team)	$1,620	11	$17,820	$4,455
Ashore (Reserve) Cold Ensemble (Aids to Navigation Team)	$1,490	9	$13,410	$3,353
Sector Ops (Reserve) Basic Ensemble	$1,620	681	$1,103,220	$275,805
Sector Ops (Reserve) Cold Ensemble	$1,490	372	$554,280	$138,570
Tactical (Reserve) Basic/Cold Ensemble (PSU)	$3,110	320	$995,200	$248,800
PPE per Person Total		4,548	$7,625,770	$1,906,443
Total	$7,625,770			
Total/Year	$1,906,443		Annual Shortfall	
Total Available	$1,130,588		($775,855)	

D. Summary

The CG depends on the Reserve force to be ready to mobilize with critical competencies in boat operations, contingency planning and response, expeditionary warfare, marine safety, port security, law enforcement, and mission support. Sustaining an effective operational reserve requires ongoing funding for training and equipment. Since the RC is fully integrated with the AC (PSUs being the only exception), daily operational needs of both Active and Reserve Components limit the availability of platforms and equipment dedicated to Reserve training, qualification, and certification. The CGR 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, and will continue to maximize the use of limited training platforms during austere budgetary environments.

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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	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 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
Utlility 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
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
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

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Table 1

Consolidated Major Item Inventory and Requirements

Nomenclature	Unit Cost	Begin FY 2016 QTY O/H	Begin FY 2017 QTY O/H	Begin FY 2018 QTY O/H	End FY 2018 QTY O/H	End FY 2018 QTY REQ
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	3	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	4	4	4	4	4
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	0	0	0	0	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
15kW Generator	$16,160	2	2	2	2	2
5kW Generator	$8,145	2	2	2	2	2
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.						

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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 2015.

Nomenclature	Average Age	Remarks
Port Security Units (PSU)		
32' Transportable Port Security Boat (TPSB)	3	
Radio Set AN/PRC-117G	1	
AN/PRC-152A Wideband, Handheld, Networking Radio	3	
Radio, VHF Motorola XTL-5000 Mobile	9	
Portable Armory	3	
All Terrain Forklift	<1	
All Terrain Vehicle, Gator (1 per unit)	<2	
Vehicle, F550 Stake-bed (1 per unit)	9	
Vehicle, F450 Pickup (5 per unit)	3	
Vehicle, F350 Pickup	3	
Generator 5kW (2 per unit)	3	
Generator 15kW	8	
Generator 5kW (2 per unit)	3	
Generators with Distribution Panel	3	
Generator, Signal Synthesizer, Frequency, MG3641N (500 KHz to 1024 MHz AM/FM)	6	
Generator Digital Clock Pulse, Synthesizer (Part #98)	3	
Utility Trailer (1 per unit)	10	
Counter, Frequency (DC to 500HHZCW)	11	
Analyzer, Communication	9	
Fuel Bladder 3K Gallon	9	
Fuel Containment Boom	3	
Tents	3	
Water Buffalo (1 per unit)	9	
Meter, Modulation (AM/FM Carrier Frequency 30 to 100 MHz)	9	
Voltmeter, Analog (5 Hz to 10 MHz)	9	
Analyser, Distortion (10 Hz-100 KHz)	8	
Base X Shelters (14 per PSU)	3	
Mobile Support Units (MSU)		
Truck, Stake-bed Class 8	3	
Truck, Stake-bed	11	
Truck, Pickup	10	
Gator, 6X6 Diesel Terrain Vehicle	8	
Generator, 240kW	8	
Generator, Light Tower	8	
Generator, Magnum 25kW	9	
Generator, Microsilent 12kW	11	

USCGR
Average Age of Equipment

Table 2

Nomenclature	Average Age	Remarks
Forklift, 10,000 lb	11	
Trailers, Tools / Equipment	7	
Trailer, Administrative Support	7	
Trailer, Logistic Support Parts	7	
Trailer, Maintenance Shop	7	
Trailer, Open Bulk Storage	7	
Computer, Laptop	1	
A/C - H/P (Air Rover Units)	8	
Portable Welding/Cutting Shops	8	
CONEX Boxes, 40' X 8'	16	
CONEX Boxes, 20' X 8'	8	
CONEX Boxes, 8' X 8'	11	
Power Distribution Center	4	
AC&R Repair and Service Kits	6	
DC Kit, Compressed Air & GenSet	7	
General Purpose Tents, 18' X 18'	8	
Diesel Powered Welder	8	
Environmental Control Unit (ECU), HP4-DL	10	
Base X Shelter (6D31) Command	10	
Base X Shelter (505) Maintenance	10	
Drash Shelter (6S)	10	
Drash Shelter (2S)	10	
Special Missions Training Center (SMTC)		
32' Transportable Port Security Boat (TPSB)	3	
Environmental Control Unit (ECU), HP-2C/338 IPT	2	
Base X Shelter (6D31)	7	
Base X Shelter (505)	7	
Base X Shelter (307)	7	
Base X Shelter (305)	7	
Base X Shelter (203)	7	
5kW Generator	11	
15kW Generator	11	
Trailer, Tank	13	
ISU 90 Shipping Container	16	

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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 2016 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 2016 are expected to arrive in RC inventories in FY 2017 or FY 2018.

Nomenclature	FY 2016	FY 2017	FY 2018

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 2015 would be expected to arrive in RC inventories in FY 2016 or FY 2017. All values are costs in dollars.

Nomenclature	FY 2013	FY 2014	FY 2015

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 2016 Qty	FY 2017 Qty	FY 2018 Qty	Remarks

Service has no planned transfers or withdrawals for the years FY 2016 thru FY 2018.

USCGR

Table 6

FY 2012 Planned vs Actual Procurements and Transfers

NOTE: This table compares planned Service procurements and transfers to the RC in FY 2012 with actual procurements and transfers. FY 2012 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 2014. Procurement and NGREA columns reflect cost values in dollars.

Nomenclature	Equip No.	FY 2012 Transfers (# of items)		FY 2012 Procurements ($s)		FY 2012 NGREA ($s)	
		Plan	Actual	Plan	Actual	Plan	Actual

USCGR had no planned or actual transfers or procurements of major equipment during FY 2012

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 2016 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 Short [1]	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 lifecycle 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	2	$92,131	$184,262	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 re-designated 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 Reserve Affairs 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 Reserve Affairs (Materiel & Facilities), 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 2016–FY 2018 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 2016–FY 2018
  - remaining shortfall for FY 2018 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 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 2012 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 2016 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 2016, 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 2015.

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 2012 Planned vs Actual Procurements and Transfers. This table compares what the Service planned to procure and transfer to the RC in FY 2012 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 2014.

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 2016–FY 2018 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 of the National Guard Bureau regarding National Guard equipment (Section II).

I. National Guard Readiness for Emergencies and Major Disasters in the United States

Section 10541 of title 10, U.S.C., required 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 (suppress insurrections at the request of a state government), 332 (enforce Federals laws or suppress the rebellions), 333 (suppress insurrections, domestic violence, unlawful combinations, or conspiracies), 12304(b) (provide assistance in response to emergencies involving a use or threatened use of a weapon of mass destruction or a terrorist attack or threatened terrorist attack in the United States that results, or could result, in significant loss of life or property), and 12406 (repel invasions, suppress rebellions, or execute Federal laws) of title 10, U.S.C., 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]).

A. Overview

Our National Guard must have access to sufficient modern equipment to provide viable defense options to our Nation's leaders. We are still a nation at war and the National Guard has demonstrated their talent and dedication time and time again. Since 2001 more than 760,000 National Guard men and women have been mobilized to fight, support operations, and provide humanitarian assistance around the world. Their capabilities and exceptional performance have proved vital to successful Total Force operations in Iraq and Libya, ongoing efforts in Afghanistan and West Africa, the massive relief efforts in Japan and Haiti, and many other engagements. At home, Guardsmen continue to provide wide-ranging, effective life-saving and response options for local, state, and Federal authorities.

The Total Force must use resources efficiently, and develop the best Active/Guard/Reserve force mix providing the greatest capability and capacity at the best value to the taxpayers. The National Guard requires the necessary resources to man, equip, sustain, and train. Modernization and recapitalization of equipment must extend to the National Guard, placing emphasis on dual-use equipment, specialized equipment, and the cyclical needs of rotational equipment used to train for scheduled deployments.

Equipment procured for DOD national defense missions can also be used to perform defense support of civil authorities (DSCA) and Domestic Operations (DOMOPS) missions. As cited herein, DOMOPS is the commonplace and widely accepted terminology to define NG operations

conducted domestically for homeland defense, civil support, and baseline operations such as planning, training and exercises regardless of duty status.

The DOD strategic guidance, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, outlines a smaller force, reduced priorities, reversibility, and a greater reliance on mobilized forces. The National Guard is a key enabling force in attaining those goals. To succeed, National Guard units must have access to sufficient modern equipment to train at home station, deploy for contingency or crisis response, and react to domestic consequence management events. There has never been a more critical time for the Nation to understand the value generated by the National Guard in support of our national security. The defense strategy combined with current fiscal realities point toward moving capacity and capability into the RCs for routine operational use as well as a strategic hedge. To succeed, we must continue to provide our people with the necessary resources to get the job done.

The National Guard equipment used to suppress insurrections, rebellions, domestic violence, unlawful combinations, conspiracies and enforce Federal laws (10 U.S.C. §§ 331–333), provide assistance in response to emergencies involving weapons of mass destruction (WMD) 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 comes from three broad sources: Army provided dual-use equipment, Air Force provided dual-use equipment, and special government off-the-shelf (GOTS) or commercial off-the-shelf (COTS) equipment, which is acquired via a variety of sources. Special government GOTS/COTS equipment are planned for and integrated by the NGB Joint Staff, but purchased by the Army National Guard (ARNG) and Air National Guard (ANG). Sufficient equipment must be available to support training and readiness requirements of the NG and its personnel for Federal and state missions. Special consideration is given to dual use equipment for the NG. Equipment procurement programs and distribution plans must be responsive to warfighting (including homeland defense [HD]) and DSCA requirements. With the exception of NG WMD Civil Support Teams (WMD-CST), which are required by law, NG forces of the chemical, biological, radiological, and nuclear (CBRN) response enterprise are equipped first with dual-use equipment, and then supplemented, as necessary, with special GOTS/COTS equipment.

DOD has established a total of 57 WMD-CSTs, one in every state and territory and two in California, Florida and New York. By law (i.e., 10 U.S.C §12310(c)), WMD-CSTs perform duties, at the direction of their state governor, in support of emergency preparedness programs to prepare for or respond to an emergency involving the use of a WMD in the United States. WMD-CSTs are also authorized to provide a rapid response to the intentional or unintentional release of nuclear, biological, radiological, toxic, or poisonous chemical materials and respond to a natural or manmade disaster in the United States that results in, or could result in, catastrophic loss of life or property. The mission of WMD-CSTs is to support civil authorities at the known or suspected domestic CBRN site by identifying CBRN agents/substances, assessing current and projected consequences, advising on response measures, and assisting with requests for additional state support.

The 17 CBRN and High-yield Explosives (CBRNE) Enhanced Response Force Packages (CERFPs) and 10 Homeland Response Forces (HRFs) maintained their training and response readiness operating tempo throughout 2014 in completing their required two annual collective

training events with integrated local incident commanders and first responders. Designated commanders completed the required mission and logistics planning for participation in United States Northern Command (USNORTHCOM) and NGB-level tiered-response CBRN Response Exercises.

The National Guard sustains Joint Incident Site Communications Capability (JISCC) system assets in support of NG CBRN response and other domestic operations. The JISCC system supports the standardization of capabilities and equipment in enabling unit-level and enterprise-level command and control communications within the 10 HRFs and the 17 CERFPs. The JISCC system provides capabilities, such as radio cross-banding, commercial internet access, public switched telephone network access, Defense Switch Network telephone access, Nonsecure Internet Protocol Router Network access, and SECRET Internet Protocol Router Network access. These capabilities are critical to remaining interoperable with other government and civilian response entities. The National Guard also uses JISCC system assets to support other DSCA and state missions.

National Guard support of civil authorities is a critical mission. NGB is committed to the objective that every state, territory, and the District of Columbia should have access to the 10 essential capabilities to respond to emergencies and major disasters in the United States. These National Guard "Essential 10" capabilities are command and control (including Joint Force Headquarters), CBRN consequence management, engineering assets, communications, transportation (surface), aviation/airlift, medical, security, logistics, and maintenance.

B. Army National Guard Equipment

1. ARNG Equipment Shortfalls

The ARNG's FY 2016 Equipment Modernization/Shortfall Category List (Table B-1) identifies ARNG capability areas that should be given additional and special attention. The list identifies capabilities required by the ARNG for modernization and/or filling of shortfalls of equipment in support of Federal and state missions. The list includes 19 categories (in alphabetical order) that contain critical dual use equipment that the ARNG continues to focus filling equipment shortages and/or modernization efforts. This table will also be submitted with the Annual Financial Report to Congress.

Table B-1. ARNG FY 2016 Equipment Modernization/Shortfall Category List

Category	Authorization FY 2016	Authorization Value ($M)	On-hand FY 2016	On-hand Value ($M)	Shortage FY 2016	Shortage Value ($M)
Air Defense	942	$ 467.1	714	$ 263.5	228	$ 203.6
Aircraft	1,937	$ 1,876.3	1,009	$ 1,425.5	928	$ 450.8
Aviation	17,319	$ 1,854.6	11,987	$ 812.9	5,332	$ 1,041.7
Battle Command and Control	71,482	$ 1,187.8	48,363	$ 736.8	23,119	$ 451.0
Battlespace Awareness	315	$ 52.1	262	$ 42.5	53	$ 9.6
Battle Command Transport Networks	193,369	$ 1,829.8	141,539	$ 1,400.9	51,830	$ 428.9
Assured Mobility	12,036	$ 610.2	9,389	$ 232.0	2,647	$ 378.2
Field Logistics	79,221	$ 1,731.2	56,358	$ 1,381.0	22,863	$ 350.1
Force Protection	329,583	$ 905.2	326,083	$ 640.8	3,500	$ 264.4
General Engineering	8,843	$ 248.2	6,911	$ 155.3	1,932	$ 92.9
Maneuver Combat Vehicles	430	$ 160.9	423	$ 158.2	7	$ 2.6
Maneuver Systems	1,533	$ 65.1	1,104	$ 39.0	429	$ 26.2
Medical Field Systems	13,633	$ 46.5	10,383	$ 36.6	3,250	$ 9.9
Soldier Systems	339,704	$ 3,194.6	314,074	$ 2,429.7	25,630	$ 764.9
Soldier Weapons	24,440	$ 76.4	23,712	$ 69.2	728	$ 7.2
Strike	3,916	$ 1,015.8	3,257	$ 859.9	659	$ 155.9
Support Systems	87,545	$ 823.3	36,452	$ 397.9	51,093	$ 425.3
Trailers	12,029	$ 599.3	9,771	$ 506.4	2,258	$ 92.8
Trucks	23,855	$ 5,525.5	20,453	$ 4,584.5	3,402	$ 941.0
Grand Total	1,222,132	$ 22,269.7	1,022,244	$ 16,172.6	199,888	$ 6,097.1

The following sections describe ARNG equipment shortfalls in the areas of aviation modernization, domestic operations, transportation, sustainment, construction engineering equipment, and communications.

a. Aviation Modernization

The overall health of the aviation portfolio remains good. The H-60 Blackhawk modernization efforts (M-model procurement, L-model cascades, and A-A-L modernization) are still ARNG's top priority. FY 2015 equipment on-hand (EOH) quantities comprise a mixed fleet of new build, cascaded, and retiring legacy aircraft. The H-60 series modernization is delayed by budget reductions and slowing cascades from the Active Component (AC). The influx of UH-60A/L displaced from the AC's downsizing and the Aviation Restructure Initiative will further exasperate the aging H-60 fleet challenge. At the current H-60 Blackhawk procurement, conversion, and cascade rate (from the A model to the L and M models), it will take until FY 2027 to fully divest the H-60A fleet. The UH-72A Lakota is scheduled to be fully fielded by FY 2015, an acceleration of one year since our last report. The modernized UH-60M fleet and future UH-60V will require additional flight simulators to support those aviators and maintainers in units and at ARNG training institutions. The Aviation Combined Arms Tactical Trainer (AVCATT) will require UH-60V, Manned/Unmanned-Teaming, and UH-72A upgrades as those programs are modernized. CH-47D conversion to CH-47F is fully funded; however, the fielding

plan includes up to 74 cascades from the AC. New equipment training for cascaded aircraft does not include funding for soldier pay, allowances, and per diem to the training sites.

b. Domestic Operations

The National Guard Reaction Forces (NGRFs) are organized and trained by the National Guard to provide governors with quick reaction and rapid response capabilities in each state or territory, but can also be made available to support the missions of combatant commanders. The NGRFs are able to respond and assist in the protection of critical infrastructure, other state or Federal assets, and any other missions as directed to promote stability and security in a state, territory, or the Nation. NGRFs are equipped with non-lethal capability sets to enhance their ability to respond to HD and homeland security missions, as well as providing for protection of NGRF personnel.

The core capabilities of the 10 HRFs and the 17 CERFPs were enhanced in FY 2014 through the fielding of the Joint Chemical Agent Detector (JCAD). The JCAD is a point detector that will enable the mass decontamination element commanders to detect toxic industrial chemicals/materials and chemical warfare agent hazards at lower levels than the replaced Automatic Chemical Agent Detector Alarm at personnel monitoring stations following wash/rinse operations within the decontamination site. CERFP and HRF commanders were also fielded the AN/PDR-75 Radiac Set employing Optically Stimulated Luminescence (OSL) technology. The OSL dosimeters will replace the dose-of-record thermoluminescent-dosimeters planning and augment the fielded AN/UDR-13 Radiac Set dosimeters.

c. Transportation

The ARNG is keeping legacy high mobility multipurpose wheeled vehicles (HMMWV) in the inventory to fill requirements and prevent capability gaps while experiencing shortages in modernized HMMWVs no longer being procured. The ARNG expects to field 1,134 Joint Light Tactical Vehicles (JLTV) by 2020. Overall, the ARNG expects to have over 20,000 JLTVs by FY 2040. The ARNG's plan to purchase 500 HMMWV ambulances was delayed due to contracting and parts availability. At completion, the ARNG will increase the HMMWV ambulance EOH to 100 percent by third quarter FY 2015.

The ARNG is participating in the ongoing Tactical Wheel Vehicle reduction studies. Upon completion, the ARNG will be fully aligned with the Army's future force structure transportation requirement capabilities.

d. Sustainment

This equipment category consists of medical, fuel, water, maintenance, and food systems. Technology innovations in water storage, water distribution, and material handling equipment will improve the Army sustainment capabilities. The ARNG continues to field new and improved capabilities such as the Load Handling System Compatible Water Tank Rack (HIPPO) and the future Light Capability Rough Terrain Forklift.

e. Construction Engineering Equipment

This equipment category includes heavy/light horizontal construction, vertical construction, diving, and firefighting equipment critically under filled or past its useful life cycle. These items

support combat, DSCA, and state missions. The ARNG has used National Guard and Reserve Equipment Appropriation (NGREA) funding over the last few years to supplement base funding for this equipment, which is still a priority shortage category for the ARNG.

f. Communications

This equipment category concerns the capabilities that ensure continuous mission command within all functions and information exchange on the ground and in the air between NG deployed forces responding to DSCA missions. Communications between DSCA responding aircraft and local civilian authorities is essential for efficient and safe responses to the emergency. Each HRF requires four Level 1, as defined by USNORTHCOM Publication 6-02 Deployable Communications Standards, Communications-on-the-Move systems to enable Advance Echelon and Main Body element critical data and voice communications services upon deployment, while en route to, and upon initial arrival at a CBRN incident site. Each CERFP requires two Level 1 Communications-on-the-Move systems to enable Advance Echelon and Main Body element critical data and voice communications services upon deployment, while en route to, and upon initial arrival at a DSCA CBRN incident site.

2. Effects of ARNG Shortfalls

While modernization levels overall are good, and within one percent of AC levels, there are nevertheless 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 and general engineering equipment consisting of firefighting support and construction equipment.

The ARNG is short both 34-ton Semitrailers and 25-ton Semitrailers. Without adequate hauling and material handling capabilities the ARNG's domestic response capabilities are significantly reduced. The addition of HMMWV ambulances will improve the ARNG's ability to provide tactical ambulances capable of reaching the last mile in rugged terrain while conducting operations in support of civil authorities. The ARNG's ability to provide clean water will remain at risk until the HIPPO is fully restored in FY 2017.

Given the ARNG's modified table of organization and equipment (MTOE) EOH of 93 percent and MTOE Critical Dual Use (CDU) EOH of 94 percent as well as overall modernization level of 92 percent, the ARNG is able to perform its national defense and DSCA missions.

3. ARNG Investment Strategies

The ARNG has used NGREA funding to successfully mitigate key ARNG shortfalls in equipment and modernization efforts. ARNG FY 2014 NGREA funding has allowed the investment of more than $97M in engineering and $71M in aviation. Additionally, the ARNG has invested nearly $82M of NGREA funding to support individual and collective training through the procurement of simulator systems. Recent NGREA funding has focused on the procurement of high-priority CDU items that have a projected shortfall and adversely impact overall readiness.

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 Memorandum for Priorities and Target fill levels for ARNG equipment. ARNG will adhere to these priorities and target fill levels to the extent possible to support ongoing overseas contingency operations, ensure a robust domestic response capability, meet Army Force Generation Aim Point equipping goals, and ensure interoperability with AC forces. Army Force Generation Aim Points are based upon the resourcing Army National Guard.

C. Air National Guard Equipment

The Air National Guard continues to work towards recapitalization and modernization of our support equipment and vehicles to optimize utility. To facilitate this objective, the ANG continues to work closely with all major commands and with Headquarters Air Force on budgeting and execution of funds for equipment and vehicles. DOD procures ANG support equipment for executing national defense missions, utilizing authorizations that are aligned to Allowance Standards. This equipment can be used to perform both national defense and DOMOPS missions. Current equipment tracking methods show, even though there has been a reduction in authorized equipment due to mission changes and associations, the majority of all authorized ANG support equipment (373,330 items) have valid uses in both national defense and DOMOPS missions. Currently, the ANG has 93 percent (348,445 pieces) of authorized support equipment and vehicles on-hand within the categories of the Essential 10 Capabilities (see Table B-2).

Table B-2. ANG Support Equipment (SE) and Vehicles

August 2014							
CABABILITY	AUTH QTY	INUSE QTY	FILL RATE	AUTH COST	INUSE COST	NEEDED QTY	NEEDED COST
Aviation SE	57,595	57,062	99%	$4,309,153,584	$3,939,621,391	533	$369,532,193
Civil Support & Force Protection	2,788	2,581	93%	$906,436,715	$839,136,715	207	$67,300,000
Command & Control	9,817	9,606	98%	$465,592,182	$481,133,391	211	-$15,541,209
Communication	5,478	5,267	96%	$47,380,397	$33,220,463	211	$14,159,934
Engineering	23,748	23,383	98%	$229,416,892	$199,594,897	365	$29,821,995
Logistics	100,608	81,452	81%	$106,150,935	$85,952,437	19,156	$20,198,498
Maintenance	102,749	99,836	97%	$2,537,728,930	$2,201,169,989	2,913	$336,558,941
Medical	8,060	8,504	106%	$1,768,390	$1,689,082	0	$0
Security	62,487	60,754	97%	$113,717,230	$107,196,163	1,733	$6,521,067
TOTAL SE	**373,330**	**348,445**	93%	**$8,717,345,255**	**$7,888,714,528**	**25,329**	**$828,551,419**
VEHICLES	16,548	15045	91%	$1,315,457,521	$942,381,380	1,503	$373,076,141
TOTAL SE & VEHICLES	**389,878**	**363,490**	93%	**$10,032,802,776**	**$8,831,095,908**	**26,832**	**$1,201,627,560**

Currently, less than 1 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 five categories of the Essential 10 capabilities.

a. Logistics

The overall ANG logistics fill rate status is 81 percent. This is a 14 percent reduction from last year's report and is attributed to aircraft mission conversions, classic associations, and a lack of overall C-130H support equipment. There has been improvement in the support equipment availability and vehicle "in commission rates." However, shortfalls exist in equipment and vehicles designed for transporting people and equipment to areas requiring rescue and recovery. Additionally, aging support equipment, such as hydraulic lifts, forklifts, test equipment, and refueling trucks are plagued by availability of parts because spares are no longer manufactured, and replacements are slow to arrive. Without spare parts, the ANG cannot maintain such equipment and vehicles in operational condition. Lastly, without proper funding for replacements, this aging support equipment will be extended beyond its life expectancy, ultimately resulting in failure.

b. Engineering

The overall engineering fill rate status is 98 percent. This includes prime power, explosive ordnance disposal equipment, bridge repair kits, search and rescue, and firefighting equipment. Moreover, the FY 2016 Total Force Continuum implementation plan identifies an ANG prime power requirement at nine different locations that costs $13M. During DOMOPS, this power could be a lifesaving capability for an affected community. 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. Additionally, 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 ANG is working diligently through the Domestic Capability Priorities (DCP), NGREA, and central Air Force (AF) procurement processes to acquire prime power capability to ensure safe, reliable, and effective power is available for Federal DSCA and state operations.

c. Transportation

Vehicle on-hand status is 91 percent. The average age of the vehicles in the ANG fleet is ten years and has a health or in-commission rate of 86 percent. With shrinking budgets and competing priorities, the resources applied to these vehicles are also diminishing. For example, the average age of 18.5 years in the medium tactical, low density, and high demand vehicles is impacted directly by these shrinking budgets, competing priorities, and available resources. The result affects the ANG's capability to perform DOMOPS missions requiring high water and massive debris removal.

d. Security

The overall security fill rate status is 97 percent, with shortfalls in less-than-lethal kits and mobility bags totaling approximately $10M, a reduction of $6M over last year. The ANG is actively filling Security Forces (SF) equipment shortfalls utilizing NGREA and other sources of

funds. SFs require outfitting with the most modern equipment available due to their extremely high operations tempo, air expeditionary force deployments, and DOMOPS missions. The ANG is currently funding the programs: less than lethal kits, portable modular ranges, and target acquisition and night observation equipment. The ANG SF has no K-9 support, and the procurement of K-9 resources is not an option. Handheld explosive detection equipment is an alternative solution and has fielded at a 99 percent rate. The ability to detect explosives at base entry control points can significantly improve installation security and provide a higher level of safety and security for all Airmen. In addition, explosive threats and incidents overseas are increasing in numbers and complexity, and ANG SF has limited capability to detect this threat; resulting in a major vulnerability.

The ANG SF is not equipped to effectively respond with less-than-lethal force to any given scenario, creating a liability and putting the safety of ANG Airmen at risk. AF instructions for using force mandate options for less-than-lethal actions. Lack of less-than-lethal capabilities and equipment greatly hinders our SF ability to secure an area effectively, particularly when performing DOMOPS missions, without resorting to lethal force. Additional capabilities for taking less-than-lethal action would align ANG SF with its AC counterparts. ANG SF currently has a $7M shortfall for 146 less-than-lethal force kits.

SF Airmen deploy at more frequent rates and for lengthier periods as compared to most other Airmen, which causes an increased degradation of equipment in SF mobility bags. ANG SF forecast a shortfall of approximately $3M for replacement and sustainment.

The ANG SF are limited by the identified shortfalls, thus reducing the capability to concurrently provide the public safety and security at home station, during overseas contingencies, and when performing DOMOPS. These shortfalls have been identified previously, and the ANG is attempting to fill the requirements through central AF procurement processes.

e. Communications

The fill rate for communications equipment is approximately 96 percent. The JISCC remains the primary means of sustaining communications equipment interoperable with civil authorities that are compliant with the National Incident Management System. Despite this, the JISCC continues to be a lower priority for replacement and sustainment, making modernization and integrated security controls efforts a challenge. For instance, as the reliance on network-based operations increases, the availability of bandwidth decreases, impacting the efficacy of the JISCC in future DSCA or DOMOPS missions. As satellite capacity is fully consumed, more efficient use of existing bandwidth is necessary. To mitigate this, a plan is being developed to provide network acceleration equipment that would make the current network traffic five times faster.

2. Effects of ANG Shortfalls

Overall, the ANG has adequate dual-use equipment for both Federal and state missions. However, equipment shortfalls exist in key areas that support logistics, engineering, transportation, security, and communications. Lack of this particular equipment could hamper the ANG’s ability to support both the combatant commanders and local civil authorities if simultaneously tasked.

Additionally, classic associations following the Total Force Enterprise construct may pose potential delays in state disaster response times due to lack of equipment at an ANG unit. To utilize equipment for an operation under state control, a governor must first seek DOD approval to utilize DOD equipment necessary for the operation. In order to provide civil authorities with timely support, a support agreement or separate equipment accountability can produce adequate timing and access to AC equipment at classic associate units, in-line with the operations of a traditional ANG unit.

The continuous changes to missions and new missions such as remotely piloted aircraft, expansion of C-130 units, and accession of new aircraft (e.g., KC-46) have produced additional shortfalls primarily in support equipment and vehicles.

See Chapter 5, Section II, for additional information on ANG shortfalls in equipment and modernization.

3. ANG Requirements and Acquisition Strategies

The ANG acquisition strategy is focused on peacetime and wartime readiness capability requirements and ensuring support considerations are an integral part of an assessment of life-cycle costs of 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 DCP conference, which was held in August 2014. The capability requirements derived and vetted at these conferences are translated into specific COTS or GOTS solutions, and 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 DCP book.

Once valid requirements are established, they are filled based on the mission priority of the unit and weapon system. The ANG uses all available funding sources to fill equipment needs. Most funding comes from the annual DOD planning, programming, budgeting, and execution process, with other funding coming from AF central agencies for support items that are interchangeable across the AF enterprise; such as personal protective equipment, communications equipment, and some vehicles. The ANG has also been aggressive in seeking other funding sources to replace items that have been expended while performing national defense and DOMOPS missions. Lastly, the ANG takes full advantage of NGREA funding to procure authorized dual-use support equipment, which increases a unit’s ability to support state missions, or to modernize equipment to ensure its reliability, relevancy, and responsiveness to future national defense and DOMOPS missions.

D. Specialized Equipment

Specialized equipment is unique equipment that is specific to the DOMOPS mission, is not considered dual-use, and is specifically authorized by Congress. Funding, management, and accounting procedures may differ from the procedures used to manage equipment authorized to support Federal missions. Much of this equipment is procured from COTS vendors and does not have organic sustainment support.

1. Specialized Equipment Shortfalls

The WMD-CSTs continue to have a limiting factor of non-redundant commercial CBRN equipment for monitoring, detection, and analysis of field incidents and modernization of specialized vehicles. Some critical COTS equipment is fielded to the WMD-CSTs without spares, such as generators and specialized vehicles. The result is likely a single point of failure for a WMD-CST mission, lessening the team's capability until replacements are obtained, or suitable substitutes are repositioned from other WMD-CST units. As noted above, adequate funding for mission critical equipment modernization, life-cycle management of legacy COTS and GOTS equipment, and a rapid acquisition process to support the procurement of leading edge technologies is paramount to both relevance and reliability of unit capabilities.

In the past, ANG has used NGREA funding to modernize its Expeditionary Medical Support (EMEDS) assemblages to current standards. ANG continues to review initial issue medical equipment in the original 17 CERFP units to determine if the original equipment is a suitable substitute for the modernized requirements. Although it was suitable two years ago, some of the lifesaving equipment is no longer supported by the manufacturers and need to be modernized.

2. Effects of Shortfalls of Specialized Equipment

The WMD-CST and CERFP equipment issues are limiting factors, with no specific effects unless personnel protection (Occupational Safety and Health Administration, National Institute for Occupational Safety and Health, National Fire Protection Association) and hazardous material protection standards change or equipment failure occurs.

While HRF and CERFP missions have not changed, some equipment items were replaced or upgraded to ensure maximum capability for CBRN medical response. The ANG Consolidated Storage and Deployment Centers (CSDC) located in Topeka, Kansas; Horsham, Pennsylvania; and Fairchild Air Force Base, Washington, provide logistical support and a growing capability to provide preventative maintenance on equipment for the 10 HRF and 17 CERFP units. The CSDCs provide limited calibration of CERFP medical equipment, and deploy EMEDS assemblages and HRF/CERFP medical resupply assemblages. Currently, the CSDCs do not have dedicated fork-lift capability in their warehouses to support the rapid deployment of medical supplies, but must rely on support from the local Logistics Readiness Squadrons. This dependence could potentially delay critical logistical support to a lifesaving DOMOPS mission.

3. Requirements and Acquisition Strategies for Specialized Equipment

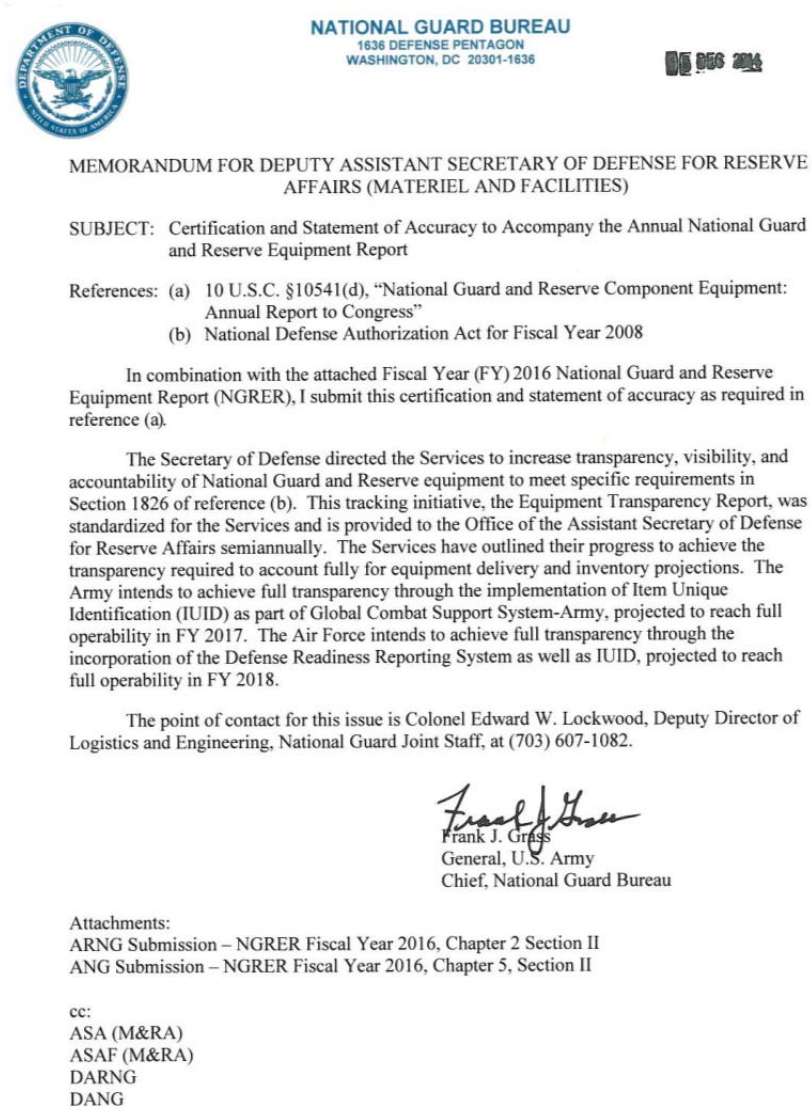
Specialized GOTS/COTS equipment for emergencies or response to a major disaster is funded using a combination of Army, ARNG, Air Force, and ANG appropriations, along with DOD-wide appropriations (e.g., the Chemical and Biological Defense Program [CBDP] funds), as well as ANG and ARNG NGREA. NGB continues to work with DOD to pursue modernization for equipment used by WMD-CSTs as technology evolves. The CBDP has programmed increases for research, development, test, and evaluation procurement; and life-cycle management for WMD-CST equipment, although unfunded requirements remain. One objective for the CBDP will be to mitigate or eliminate the single failure points in CBDP equipment mentioned above.

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 projections reported in previous NGRERs, and (2) a certification by the Chief, National Guard Bureau (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"

Figure B-1. CNGB Memorandum



NATIONAL GUARD BUREAU
1636 DEFENSE PENTAGON
WASHINGTON, DC 20301-1636

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR RESERVE AFFAIRS (MATERIEL AND FACILITIES)

SUBJECT: Certification and Statement of Accuracy to Accompany 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

In combination with the attached Fiscal Year (FY) 2016 National Guard and Reserve Equipment Report (NGRER), I submit this certification and statement of accuracy as required in reference (a).

The Secretary of Defense directed the Services to increase transparency, visibility, and accountability of National Guard and Reserve equipment to meet specific requirements in Section 1826 of reference (b). This tracking initiative, the Equipment Transparency Report, was standardized for the Services and is provided to the Office of the Assistant Secretary of Defense for Reserve Affairs semiannually. The Services have outlined their progress to achieve the transparency required to account fully for equipment delivery and inventory projections. The Army intends to achieve full transparency through the implementation of Item Unique Identification (IUID) as part of Global Combat Support System-Army, projected to reach full operability in FY 2017. The Air Force intends to achieve full transparency through the incorporation of the Defense Readiness Reporting System as well as IUID, projected to reach full operability in FY 2018.

The point of contact for this issue is Colonel Edward W. Lockwood, Deputy Director of Logistics and Engineering, National Guard Joint Staff, at (703) 607-1082.

Frank J. Grass
General, U.S. Army
Chief, National Guard Bureau

Attachments:
ARNG Submission – NGRER Fiscal Year 2016, Chapter 2 Section II
ANG Submission – NGRER Fiscal Year 2016, Chapter 5, Section II

cc:
ASA (M&RA)
ASAF (M&RA)
DARNG
DANG

A. Army National Guard

The Army has shown steady transparency improvements toward 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.

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. It is believed 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 in, as required by Congress. The ARNG must have the ability to systematically audit and validate delivery data by year of appropriation.

B. Air National Guard

To meet the equipment certification required by Congress, ANG is working with the Air Force to develop processes to incorporate the use of Asset Marking and Tracking capability, expanding accountability measures through existing systems, and crafting policy that identifies key responsibilities for Functional Area Managers and commanders.

The ANG is testing a major initiative which includes identifying the funding source on a requisition and ensuring that equipment is tracked within the Allowance Standards through disposition; expecting improved total asset visibility. In addition, items purchased to support the ANG national defense and DOMOPS missions is being tracked using a unique Allowance Standard (AS041) to improve asset visibility throughout the life cycle.

Further, ANG is implementing the use of the Defense Property Accountability System as the system of record to improve cradle-to-grave vehicle fleet management to identify requirements through disposition.

Lastly, ANG units are establishing a baseline accountability process while conducting base-wide inventories of all assets as part of our Financial Improvement and Audit Readiness 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. In Phase 2, we are reviewing all remaining support equipment assets stored in the Logistics Readiness Squadrons and other supply activities. The second phase concluded in October 2014.

These processes do not provide the fidelity necessary for CNGB to certify all assets have been received. However, every effort is being made to track equipment through the Air Force and ANG supply chain with an anticipated get-well date in 2018.

C. Procurement Transparency and Certification

The National Guard continues to implement mission and programmatic changes to meet transparency requirements through focused leadership, equipping strategies, and modernization. The RCs have transitioned from a strategic reserve to an operational force while sustaining their HD, DSCA, and state missions. Although equipment transparency and visibility are now much better than in years past, supporting automation systems currently in use for data collection do not yet generate the data necessary to fully meet requirements. Major end item asset visibility and redistribution have proven to be complex, multilayered tasks. The National Guard, working together with the Army and Air Force, has aggressively pursued methods to build cooperation and create capabilities, such as establishing automated reporting linkages to procurement appropriations. Further improvements will be put in place to achieve a balance between requirements and resources.

The Army continues in its commitment to ensure equipment transparency including accountability, traceability and reporting from procurement planning to delivery to the Reserve Component. Process improvement are being identified to ensure transparency incorporating traceability from funding, procurement, production, delivery, and fielding to individual unit level. A key component of the Army's effort will be to establish an automated transparency process. The Army expects the development and implementation of IUID coding and system implementation to provide the automated means necessary to trace delivery of equipment to the funding year and appropriation from which it was resourced. Once fully operational, IUID will be in the final piece necessary to enable information sharing between various systems in the acquisition process. The IUID system is currently scheduled to become fully operational by 2017.

In recent years, the Military Services have improved their processes and automation systems to facilitate the procurement and distribution of equipment and, to some extent, the tracking of these resources throughout the processes. While it is still not possible for the CNGB to certify that all funding intended for the NG is resulting in the delivery of equipment to our units, the Army and the Air Force continue efforts to meet that requirement. In the near future, the maturation of these reports and modernization of the AF logistics system should combine to provide the transparency needed for all Air Force equipment procurement processes.

III. Summary

The National Guard continues to implement mission and programmatic changes to meet accountability and transparency requirements through focused leadership, equipping strategies, and modernization. The NG is an operational force while sustaining their HD, DSCA, and state missions. Although equipment transparency and visibility are now much better than in years past, supporting automation systems currently in use for data collection do not yet generate the data necessary to fully meet requirements. Major end item asset visibility and redistribution have proven to be complex, multilayered tasks. The National Guard, working together with the Army and Air Force, has aggressively pursued methods to build cooperation and create capabilities, such as establishing automated reporting linkages to procurement appropriations. Further improvements will be put in place to achieve a balance between requirements and resources.

From trucks and airplanes to radios and medical tents, NG 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.

Appendix C
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Appendix D
Acronym Glossary

Acronym	Nomenclature
AAV	amphibious assault vehicle
ABCT	Armor Brigade Combat Team
AC	Active Component(s)
ACC	Air Combat Command
ACS	Agile Combat Support
ACV	Amphibious Combat Vehicle
ADAM	Air Defense Airspace Management System
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
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
AM	amplitude modulation
AMC	Air Mobility Command (Air Force)
AMCM	airborne mine countermeasures
AMD	Air and Missile Defense
AMDPCS	AMD Planning and Control System
AMP	Avionics Modernization Program
AMRAAM	advanced medium-range air-to-air missile
ANG	Air National Guard
ANGB	Air National Guard Base
AOC	air and space operations center
AOG	Air Operations Group
AOR	area of responsibility
APS	Army pre-positioned stocks
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)
ASW	antisubmarine warfare
ATM	Air Traffic Management
ATP	advanced targeting pod
ATP-SE	Advanced Targeting Pod-Sensor Enhanced
AVCATT	Aviation Combined Arms Tactical Trainer
AVLB	Armored Vehicle Launched Bridge
BA	Battlefield Airmen

Acronym	Nomenclature
BCA	Budget Control Act of 2011
BCT	brigade combat team
bhp	brake horsepower
BLOS	beyond line-of-sight
BOIP	Basis of Issue Plan
BOL	back of launcher
BUMED	Bureau of Medicine and Surgery
C2	command and control
C2CRE-B	C2 CBRN Response Element-Bravo
C4	command, control, communications, and computer
CA	civil affairs
CAB	Combined Arms Battalion
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
CCIR	Cyberspace and Critical Infrastructure Range
CDU	Critical Dual Use
CERFP	CBRNE Emergency Response Force Package
CG	Coast Guard
CGR	Coast Guard Reserve
CHINFO	Chief of Navy Information
CLS	Contracted Logistics Support
CMC	Commandant of the Marine Corps
CNGB	Chief, National Guard Bureau
CNO	Chief of Naval Operations
CNR	Chief of Navy Reserve
CNS	Communication, Navigation, Surveillance
COCOM	combatant command
CONUS	continental United States
COTS	commercial off–the-shelf
CRC	control and reporting center
CRF	Coastal Riverine Force
CROWS	Common Remotely Operated Weapon Station
CRP	Core Radio Package
CSAF	Chief of Staff, United States Air Force
CSDC	Consolidated Storage and Deployment Center
CSS	combat service support
CST	Civil Support Team
CW	cyber warfare
DARPL	Dynamic Army Resourcing Priorities List
DART	Domestic All-Hazards Response Team
DCC	DART Coordination Cells
DCGS	distributed common ground system
DCP	Domestic Capability Priorities
DET	Displaced Equipment Training
DGS	distributed ground station

Acronym	Nomenclature
DHS	Department of Homeland Security
DMDR	Digital Mission Data Recorder
DMO	Distributed Mission Operations
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DOMOPS	Domestic Operations
DON	Department of the Navy
D-RAPCON	Deployable Radar Approach Control
DSCA	defense support of civil authorities
EA	electronic attack
EAB	Echelons Above Brigade
EMAC	emergency management assistance compact
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
ESF	Emergency Support Function
ETR	Equipment Transparency Report
EXPCOMBATCAM	Expeditionary Combat Camera
FFG	guided-missile frigate
FLIR	forward-looking infrared
FLSW	Fleet Logistics Support Wing
FM	frequency modulation
FMTV	Family of Medium Tactical Vehicles
FP	Force Protection
FTD	field training detachment (Air Force)
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
GCC	geographic combatant commanders
GCSS-Army	Global Combat Support System-Army
GEOINT	geospatial intelligence
GFMAP	Global Force Management Allocation Plan
GOSC	General Officer Steering Committee
GOTS	government off–the-shelf
GPS	Global Positioning System
HD	homeland defense
HDTS	Helmet Display Tracking System
HEMTT	heavy expanded mobility tactical truck

Acronym	Nomenclature
HH	Hospital Helicopter
HIMARS	High Mobility Artillery Rocket System
HIPPO	Load Handling System Compatible Water Tank Rack
HM	helicopter mine countermeasures squadron (Navy)
HMIT	helmet-mounted integrated targeting
HMMWV	high mobility multipurpose wheeled vehicle
hp	horsepower
HQDA	Headquarters, Department of the Army
HRF	Homeland Response Force
HSC	helicopter sea combat squadron (Navy)
HSL	helicopter antisubmarine squadron light (Navy)
HTV	Heavy Tactical Vehicle
IA	individual augmentee
IAP	International Airport
IEW	intelligence and electronic warfare
INS	inertial navigation system
IP	Internet protocol
IPT	Integrated Product Team
IR	infrared
ISO	Isochronal Inspection
ISO	International Organization for Standardization
ISR	intelligence, surveillance, and reconnaissance
ITAS	Improved Target Acquisition System
IUID	Item Unique Identification
JB	Joint Base
JCAD	Joint Chemical Agent Detector
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
kW	kilowatt
LAIRCM	Large Aircraft Infrared Countermeasures
LARS	Lightweight Airborne Radio System
lb	pound
LCS	littoral combat ship
LCU	landing craft utility
LDP	LITENING Digital Port
LHS	Load Handling System
LIN	Line Item Number
LMTV	Light Medium Tactical Vehicle
LUH	Light Utility Helicopter
LVC	Live, Virtual, Constructive
LVSR	Logistics Vehicle System Replacement

Acronym	Nomenclature
MAF	mobility air forces
MAFFS	Modular Airborne Firefighting System
MAJCOM	major command (Air Force)
MARCORSYSCOM	Marine Corps Systems Command
MARFORRES	Marine Forces Reserve
MASS	Modular Aerial Spray System (Air Force)
MEDEVAC	medical evacuation
MEOH	modified version of EOH (Army)
MFGI	Mobilization Force Generation Installation
MH	multimission helicopter
MIRCS	Mobile Integrated Remains Collection System
MISO	military information support operations
MMCT	Multi-Mission Crew Trainers
MMPV	Medium Mine Protected Vehicle
MPFUB	Maritime Prepositioning Force Utility Boats
MPRA	maritime patrol and reconnaissance aircraft
MSC	Military Sealift Command
MSU	mobile support unit
MTOE	modified table of organization and equipment
MTV	medium tactical vehicle
MUM-T	Manned/Unmanned-Teaming
MYP	Multi-year Procurement
NAS	naval air station
NAVAIR	Naval Air Systems Command
NAVELSG	Navy Expeditionary Logistics Support Group
NAVEODTECHDIV	Naval Explosive Ordinance Disposal Technology Division
NBC	nuclear, biological, and chemical
NCF	naval construction force
NCHB	Navy cargo handling battalion
NCR	naval construction regiment
NDAA	National Defense Authorization Act
NECC	Navy Expeditionary Combat Command
NEIC	Navy Expeditionary Intelligence Command
NELR	Navy expeditionary logistics regiment
NET	New Equipment Training
NG	National Guard
NGB	National Guard Bureau
NGREA	National Guard and Reserve Equipment Appropriation
NGRER	National Guard and Reserve Equipment Report
NGRF	National Guard Reaction Force
NMCB	naval mobile construction battalion
NSW	naval special warfare
NTSU	Night Targeting System Upgrade
NUFEA	Navy-unique fleet-essential airlift
O&M	Operation and Maintenance
OASD/RA	Office of the Assistant Secretary of Defense for Reserve Affairs
OCO	overseas contingency operations
OCONUS	outside the continental United States

Acronym	Nomenclature
OSHA	Occupational Safety and Health Administration
OSL	optically stimulated luminescence
P-1	Service Procurement Programs
P-1R	Service Procurement Programs - Reserve Components
P-21	Exhibit P-21, Production Schedule
P-40	Exhibit P-40, Budget Line Item Justification
PDTE	Pre-deployment Training Equipment
PIRL	Prioritized Integrated Requirements List
PLS	palletized load system
PMATS	Predator Mission Aircrew Training Systems
PPE	personal protective equipment
PRESBUD	President's Budget
Prime BEEF	Prime Base Engineer Emergency Force
PRP	Personnel Retrieval and Processing
PSU	port security unit
QDR	Quadrennial Defense Review
RAID	Redeployment Assistance and Inspection Detachment
RB-S	Response Boat-Small
RC	Reserve Component(s)
RED HORSE	Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer
RPA	remotely piloted aircraft
RTIC	Real Time Information in the Cockpit
SADL	situational awareness data link
SATCOM	satellite communications
SCU 8	Software Capability Upgrade 8.0
SE	support equipment
SEAL	sea-air-land
SECAF	Secretary of the Air Force
SELRES	Selected Reserve
SF	security forces
SIGINT	signals intelligence
SINCGARS	single-channel ground and airborne radio system
SKL	Simple Key Loader
SLEP	service life extension program
SLOS	secure line-of-sight
SMFCD	smart multi-function color display
SMTC	Special Missions Training Center
SOC	squadron operations center
SOF	special operations forces
SPAWAR	Space and Naval Warfare Systems Command
SPO	system program office
STUAS	Small Tactical Unmanned Aircraft System
SWE	Surface Warfare Enterprise
T/A	Training Allowance (Marine Corps)
T/E	Table of Equipment
TADSS	Training Aids, Devices, Simulators, and Simulations

Acronym	Nomenclature
TCF	Tactical Combat Formation
TDA	Table of Distribution and Allowances (Army)
TDL	tactical data link
TOA	table of allowance (Navy)
TOW	tube launched, optically tracked, wire guided
TPE	Theater Provided Equipment
TPSB	transportable port security boat
TSW	Tactical Support Wing
TVDL	Tactical Video Data Link (TVDL)
TWV	tactical wheeled vehicle
U.S.	United States
U.S.C.	United States Code
UAS	unmanned aircraft system
UH	Utility Helicopter
UHF	ultrahigh frequency
USAR	United States Army Reserve
USCENTCOM	United States Central Command
USCGR	United States Coast Guard Reserve
USMCR	United States Marine Corps Reserve
USNORTHCOM	United States Northern Command
USNR	United States Navy Reserve
USPACOM	United States Pacific Command
USS	United States ship
VAQ	tactical electronic warfare squadron (Navy)
VECTS	Virtual Electronics Combat Training System
VECTS	Virtual Electronic Countermeasure System (Air Force)
VFA	strike fighter squadron (Navy)
VFC	fighter squadron composite (Navy)
VHF	very high frequency
VP	patrol squadron (Navy)
VR	Fleet Logistics Support Squadron
WEPTAC	Weapons and Tactics Conference
WIN-T	Warfighter Information Network-Tactical
WMD	weapons of mass destruction
WMD-CST	Weapons of Mass Destruction Civil Support Team
WR-ALC	Warner Robins Air Logistics Center