

**NATIONAL GUARD AND RESERVE EQUIPMENT  
REPORT FOR FISCAL YEAR 2005**

**(NGRER FY 2005)**

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

**February 2004**

**Prepared by  
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**FOREWORD**

The National Military Strategy (NMS) requires the United States military forces to sustain a high degree of readiness to be able to deploy anywhere around the globe. This strategy requires our Reserve components (RC) to support multiple missions across the continuum of military operations. The NMS also demands a capabilities-based military force that is ready to respond at a moment's notice. The Cold War is over; the Global War on Terrorism (GWOT) is taking its place and America's contract with the RC has changed. Because the RC now comprises almost 50 percent of the Total Force, they are a key part of America's Total Force defense and an essential partner in military operations ranging from Homeland Defense, peacekeeping, humanitarian relief and small-scale contingencies. This capabilities-based approach will continue to find the RC supporting Active component (AC) forces across the full spectrum of military missions.

Properly equipping the RC with modern, interoperable equipment is vital to the success of our defense strategy. The Department of Defense's (DoD) "First-to-Fight, First-to-Equip" policy, which currently underlies the equipment distribution policy, mandates that equipment be provided to units commensurate with their planned wartime deployment. The prosecution of the GWOT, and responding to contingency operations has caused the National Guard and Reserve Forces to be called upon more frequently, and for longer durations than in recent history. These Guard and Reserve Forces have become full-time combat and combat service support (CSS) forces, fighting with AC units, or replacing them altogether. Under the current level of operational tempo (OPTEMPO), each Service has experienced high demand for some capabilities and career specialties, which have required resolution. Some of the Services were able to identify rebalancing requirements early and have already programmed initial efforts to address stressed career fields. Other Services are putting plans in place for the near-term years ahead. An effective Total Force Policy necessitates side-by-side modernization, resulting in a ready, capable force.

In response to Congressional reporting requirements identified in Title 10, United States Code, Section 10541, the National Guard and Reserve Equipment Report (NGRER) describes the individual plans of each Military Service and the United States Coast Guard Reserve (USCGR) to meet the RC equipment requirements in support of the NMS. The report is designed to answer the question: How well is the RC equipped to meet the current and future needs of the nation?

Chapter One of this report is an overview of the state of RC equipment readiness and provides an analysis of key issues, including equipment availability, equipment shortages, procurement plans to fill shortages, transformation, and compatibility and interoperability issues affecting the RC. Chapters Two through Six provide detailed narratives and data tables for fiscal year FY 2005, and projected data for FYs through 2007. The narratives describe the Service and individual RC equipment plans for a capabilities-based force.

The NGRER demonstrates the effort needed to better integrate the RC into their Services' equipping plans and programs to achieve a well-balanced, seamlessly integrated military force. Using the concepts and principles of the Defense policy goals, DoD will continue to optimize the effectiveness of its RC by adapting existing capabilities to new circumstances and threats and developing new capabilities needed to meet new challenges to our national security.

Sincerely,

A handwritten signature in blue ink that reads "T. F. Hall".

T. F. Hall





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## Introduction

### I. Report Requirements

a) Overview of Statutory Requirement: The DoD Authorization Act of 1982 (Public Law 97-86) established the requirement for DoD to provide an annual report to the Congress, by February 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 US Code placing the reporting requirement under Section 115(b). The Congress in Public Law 103-337 transferred reporting requirements to a new Subtitle E, RC, Part 1, Chapter 1013, which was re-designated Section 10541. Finally, in compliance with the FY 1993 National Defense Authorization Act, Section 1134, Title XI, the NGRER was expanded to include a description of the current status of equipment incompatibility between the AC and RC, the effect of that level of incompatibility, and the plan to achieve full compatibility.

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 (DHS) (US Coast Guard).

b) Current Law: The section below is an excerpt from Title 10, United States Code, Section 10541.

#### *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 February 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.*

*(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.*

## 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 fiscal years 2005 to 2007 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 2005 - FY 2007.
  - remaining shortfall for FY 2008 and beyond.
- Focus primarily on major items of equipment.

## III. Report Contents

a) Report Introduction / Overview and Analysis (Chapter 1): The Introduction provides an overview of statutory requirements, report objectives, and terminology. The Overview and Analysis 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 mission(s). 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: 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 Data)
- Table 4: NGREA Planned Procurements (FY 2002 – FY 2004)
- Table 5: Projected Equipment Transfers and Withdrawals
- Table 6: FY 2001 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: Major Item of Equipment Inventory.** 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, AFRC, USNR and 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 (LIN) for Army; Table of Authorized Materiel (TAM) for the Marine Corps; Equipment Cost Code (ECC) for Navy engineering items; and National Stock Number (NSN) for the Air Force.

Cost is the FY 2005 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 2005, 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.

**Table 3: (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: NGREA.** 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 Transfers and Withdrawal Quantities.** This table portrays the planned equipment transfers (AC to RC), withdrawals, and decommissionings. 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 2001 Planned vs. Actual Procurements and Transfers.** This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003.

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 05-09 FYDP, are listed on 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.

## Chapter 1 Analysis and Overview

### I. Scope of Report

In the past two years, as a result of deployments and the GWOT, the DoD has deployed and employed RC units and equipment more often and longer than at any time in recent history. This additional and excessive wear on equipment is straining both maintenance and procurement dollars to meet requirements for continued operations. The Services must maintain interoperability and compatibility of equipment and systems as we continue to develop and refine a capabilities-based force.

The NGRER identifies major items of equipment in the RC of each Service, including the USCGR, which are of interest to the DoD and Congress. Each year, the Services and their RC review the equipment in the RC inventories to decide which should be included in the NGRER. Major items of equipment include aircraft, tanks, ships, trucks, engineer equipment and various support items. Data on equipment included in the report consists of large dollar value requirements and equipment shortages, critical RC shortages, Service procurements for the RC, and items procured with NGREA funds.

*Chart 1* compares the number of items of equipment included in recent NGRERs.

*Chart 1*

#### Items of Equipment Reported in the NGRER

<b>RC</b>	<b>FY 1999 NGRER</b>	<b>FY 2000 NGRER</b>	<b>FY 2001 NGRER</b>	<b>FY 2002 NGRER</b>	<b>FY 2003 NGRER</b>	<b>FY 2004 NGRER</b>	<b>FY 2005 NGRER</b>
ARNG	358	275	168	113	113	121	130
USAR	298	248	239	239	271	239	270
USMCR	154	146	154	157	156	156	152
USNR	294	136	44	38	38	35	35
ANG	191	163	29	30	31	31	30
AFRC	127	121	17	16	27	27	28
USCGR	41	34	0	21	22	22	22
<b>Total</b>	<b>1463</b>	<b>1123</b>	<b>651</b>	<b>614</b>	<b>658</b>	<b>631</b>	<b>667</b>

Note: The USCGR included AC equipment prior to FY 2001. The FY 2002 and current reports focus on USCGR equipment only.

The RC equipment inventories include thousands of different equipment types. The FY 2005 NGRER highlights 667 major equipment types whose total dollar value represents 94 percent of the value of all current RC equipment inventories. These 667 major equipment types include all RC aircraft, tanks, and ships and the other most important and expensive equipment items in the RC inventories. In addition, the listed equipment covers the critical RC equipment shortfalls and planned RC equipment procurements for FY 2005 through FY 2007. These major equipment items provide an accurate picture of the status of the current inventory of RC major equipment.

This report provides analysis of RC inventories based primarily on the dollar value of the RC equipment to allow the aggregation, comparison and summary of diverse types of equipment without distorting the comparisons of high and low density equipment. However, inventory and requirement item counts are also provided at the detailed level. The total requirement and inventory for each major equipment type is weighted by the equipment's procurement cost. The procurement costs are from the Services' official data and reflect either the latest procurement cost adjusted for inflation, or the current replacement cost. Table 2, after each RC narrative, provides the average age of the RC's major equipment and the specific RC narrative discusses the plans and costs for replacing and modernizing older equipment.

## II. Long-Term Equipping Strategy

The Assistant Secretary of Defense for Reserve Affairs developed an RC Equipping Strategy to ensure that RC units are equipped to support the NMS, including crisis response and peacetime engagements. The long-term goal of the strategy is to provide the RC modern, interoperable equipment to enable them to do their job side-by-side with the AC and coalition partners.

The equipping strategy is based on identifying all RC equipment requirements, using smart business practices to resolve equipment shortfalls, and to procure new equipment only when necessary. It is vital that the AC, RC, and coalition partners acquire compatible and interoperable equipment. In some instances, equipping the RC with the most modern equipment must be postponed, and the RC must maintain its legacy equipment as the Services cope with transformation. The Marine Corps appears to have the most effective equipping strategy for their RC, in which they equip their RC in direct proportion to the size and mission of the components.

Some examples of smart business practices are just-in-time inventory and controlled humidity storage that achieve efficiencies and cost savings. In other cases, they use commercial items in lieu of military-specifications. Industry sources are also rebuilding equipment and providing repair parts support. The Service narrative sections detail the use of redistributed equipment and other smart business practices.

The RC utilizes the Extended Service Program (ESP) or Service Life Extension Program (SLEP) to rebuild existing equipment at a fraction of the cost of new procurement. For example, in the Army, a tactical truck, nearing the end of its mechanical and functional life, gains an additional 15 years of use with this method. Another example of a cost saving program is the USMC's modernization of utility and attack helicopters into higher capacity systems, through extensive upgrades and replacement of older two-blade rotor systems with four blade rotors. The ESP/SLEP initiative has quickly provided reliable equipment at significant cost savings to the RC. While extending the service life of equipment has proven to be cost efficient, it has also created logistic and training issues when units are mobilized. In some cases, when service members deploy, they fall-in on more modern equipment on which they may not have the requisite training for the operation or maintenance of that equipment. The USMCR has solved this problem by using training sets that are compatible and interoperable with the AC.

We must ensure that over the course of time, other projects do not subsume the ESP and SLEP programs and funding, negating their benefits. We must maintain the intent of the cost avoidance measures.

### III. Equipment Availability to Meet Mobilization Requirements for FY 2007

This report describes how well the RC is equipped to meet the projected mobilization requirements at the end of FY 2007. The projected inventory and requirement for each of the RC major equipment types are shown in Table 1 at the end of each of the RC narratives. These narratives also discuss plans for resolving any critical shortfalls. The percentages of wartime-required equipment identified in the NGRER that are currently on-hand or projected to be in RC inventories by the end of FY 2007 are shown in Chart 2. The percentages include planned new equipment deliveries, cascaded equipment from the AC, or withdrawals through the end of FY 2007. Again, these percentages are based on the dollar values of inventories and requirements to allow aggregation of diverse equipment types. They include, where appropriate, authorized substitute equipment for the RC, to provide an accurate picture of the equipment expected to be available to the RC in the event of mobilization. The quantities and types of RC major equipment substitution are provided in Table 7, after each RC narrative. In addition, any excess equipment items beyond the specified requirement are excluded from the aggregate percentage computation to ensure that the excess equipment does not offset shortages of other equipment.

*Chart 2*

#### **Equipment Available to Meet FY 2007 Mobilization Requirements** (Includes Authorized Substitutes)

<b>Reserve Component</b>	<b>Percentage of FY 2007 Required Equipment</b>
ARNG	85%
USAR	66%
USMCR	91%
USNR	100%
ANG	100%
AFRC	95%
USCGR	98%
<b>Overall</b>	<b>93%</b>

FY 2007 calculations are based upon the *Table 1* data that follows each RC narrative.

As shown in Chart 2, the RC projects that the total dollar value of overall RC equipment inventories will represent 93 percent of the total RC mobilization requirement dollar value by the end of FY 2007, given delivery of planned procurements and cascaded equipment. Although the aggregate percentage is 93 percent, the USAR and ARNG have lower projected availabilities, indicating that the Army RC still have critical shortages of major equipment by the end of FY 2007. As the Army RC narratives point out, these shortages are especially critical for early deploying Army RC Combat Support (CS) and Combat Service Support (CSS) units.

Current Army transformation efforts to rebalance the force by establishing more AC CS/CSS units will reduce the need to mobilize RC forces within the first 15 days of an operation, and may reduce the criticality of these RC CS/CSS shortfalls.

Comparing this NGRER to last year's NGRER, the 93 percent projected total RC equipment availability at the end of FY 2007 is slightly lower than last year's projection for FY 2006 (94 percent). On average, the individual RC changes in projected percentage availability from last year varied by 3 percentage points or less. The lone exception was the USAR, which decreased by 11 percentage points (from 77 to 66 percent available) from last year's projection. As discussed in the USAR narrative section, an additional concern not reflected in the availability percentage is the compatibility, interoperability, and capability of the available USAR equipment when compared with current AC equipment. Combatant Commanders cannot logistically support the deployment of older, incompatible equipment and are unwilling to accept unit equipment with lower performance capabilities than that available in the AC units.

#### IV. Equipment Shortages

The dollar value of the current total major equipment requirements, inventories (excluding substitutes), and shortfalls for the RC at the beginning of FY 2004 are shown in Chart 3. The RC total equipment shortfall is approximately \$15.7 billion or 11.3 percent of the RC equipment requirements. The shortfall of 11.3 percent for FY 2004 is slightly less than the 11.9 percent FY 2003 shortfall shown in last year's NGRER; however, that slight decrease is due mainly to the elimination of projected AFRC unfunded modernization shortfalls that were inadvertently included in last year's AFRC shortfall total.

*Chart 3*

**FY 2004 Reserve Component Equipment Shortages**  
(Excluding Substitutes)  
Total Equipment Value (\$)

<b>Reserve Component</b>	<b>Requirements</b>	<b>On-Hand</b>	<b>Shortage</b>	<b>Shortage (%)</b>
ARNG	41,951,279,930	31,212,029,742	10,739,250,188	25.6
USAR	9,684,247,661	6,826,026,923	2,858,220,738	29.5
USMCR	7,332,484,952	6,703,220,219	629,264,733	8.6
USNR	14,121,623,474	14,115,449,005	6,174,469	0
ANG	48,915,535,512	47,863,139,000	1,052,396,512	2.2
AFRC	17,089,545,000	16,661,440,000	428,105,000	2.5
USCGR	19,418,100	18,986,600	431,500	2.2
<b>Total</b>	<b>139,114,134,629</b>	<b>123,400,291,489</b>	<b>15,713,843,140</b>	<b>11.3</b>

## V. Equipment Procurements Programmed to Fill Current Equipment Shortages

The Services program for the procurement of new equipment, both AC and RC, is in the President's Budget annually. The exhibit in the President's Budget that provides RC equipment procurement details is located in the P-1R. Table 3, located after each RC narrative section, depicts the currently programmed procurements for the years FY 2005 through FY 2007. Equipment normally begins to arrive in the AC and RC inventories one to two years after appropriation; for example, the FY 2005 procurements should begin arriving in FY 2006 and FY 2007.

The past Service equipment procurements have not always been sufficient to meet the growing requirements to replace and modernize the RC equipment inventories. In response to this situation, Congress provided additional funds, specifically for the RC, in the form of NGREA. These additional NGREA funds, which vary from year-to-year, have been helpful in alleviating shortfalls in RC equipment procurement. The value of specific major equipment end items and miscellaneous equipment procured with NGREA funds from FY 2002 through FY 2004 is depicted in Table 4 after each RC narrative. NGREA projections beyond FY 2004 are not provided because the Services do not budget NGREA. NGREA is provided by Congressional adds.

Funding levels from the RC procurement funding sources for the years FY 1999 through FY 2005 are compared in Chart 4. It should be noted that the funding dollar figures are not adjusted for inflation, and the totals for FY 2005 do not include any NGREA or Congressional additions since those values will not be available until after publication of the NGRER. The annual funding totals show an overall increase from 1999, when comparing the years for which complete totals are available. More recently, FY 2003 increased by 16 percent from the previous year; while FY 2004 is 12 percent lower than for FY 2003. This recent volatility in funding levels can be attributed to the inherent uncertainties as DoD transformation efforts continue in response to the GWOT. The decrease in the FY 2004 budget is a reflection of the Service's transformation priorities and risk assessments. NGREA, a funding source the RC has relied heavily upon in the past, has shown a negative trend through FY 2003. However, in contrast with the decrease in the FY 2004 P1-R funding levels, the NGREA significantly increased in FY 2004 (from \$98 million to \$397 million).

Chart 4

**Reserve Component Procurement Funding Comparison**  
(\$ in Millions)

		ARNG	USAR	USNR	USMCR	ANG	AFRC	Total	Grand Total
FY 1999	President's Budget P-1R Submit	502.60	158.10	45.40	39.93	263.26	115.04	1,124.33	
	Congressional Adds to AC Accts for RC	224.30	9.50	53.00	0.00	129.80	75.40	492.00	
	NGREA	20.00	20.00	60.00	20.00	212.00	20.00	352.00	
	<b>TOTAL</b>	<b>746.90</b>	<b>187.60</b>	<b>158.40</b>	<b>59.93</b>	<b>605.06</b>	<b>210.44</b>		<b>\$1,968.33</b>
FY 2000	President's Budget P-1R Submit	661.14	175.97	77.45	56.93	334.12	149.29	1,454.89	
	Congressional Adds to AC Accts for RC	267.10	12.00	35.60	2.80	270.80	17.60	605.90	
	NGREA	29.85	29.85	19.90	19.90	29.85	19.90	149.22	
	<b>TOTAL</b>	<b>958.08</b>	<b>217.81</b>	<b>132.94</b>	<b>79.63</b>	<b>634.77</b>	<b>186.79</b>		<b>\$2,210.02</b>
FY 2001	President's Budget P-1R Submit	884.42	174.32	34.72	43.69	326.83	127.60	1,591.58	
	Congressional Adds to AC Accts for RC	287.71	115.32	105.80	0.00	505.65	0.00	1,014.48	
	NGREA	49.54	4.95	4.95	4.95	29.73	4.95	99.08	
	<b>TOTAL</b>	<b>1,221.67</b>	<b>294.59</b>	<b>145.47</b>	<b>48.64</b>	<b>862.21</b>	<b>132.55</b>		<b>\$2,705.14</b>
FY 2002	President's Budget P-1R Submit	925.59	181.54	24.11	40.42	377.89	108.73	1,658.28	
	Congressional Adds to AC Accts for RC	151.14	3.50	4.50	0.00	33.40	2.00	194.54	
	NGREA	217.29	101.55	9.86	4.93	280.42	75.22	689.27	
	<b>TOTAL</b>	<b>1,294.03</b>	<b>286.58</b>	<b>38.47</b>	<b>45.35</b>	<b>691.71</b>	<b>185.95</b>		<b>\$2,542.09</b>
FY 2003	President's Budget P-1R Submit	1,046.30	568.00	39.50	253.70	341.70	118.60	2,367.80	
	Congressional Adds to AC Accts for RC	193.74	65.40	86.30	0.00	217.35	2.50	565.29	
	NGREA	29.40	9.80	9.80	9.80	29.40	9.80	98.00	
	<b>TOTAL</b>	<b>1,269.44</b>	<b>643.20</b>	<b>135.60</b>	<b>263.50</b>	<b>588.45</b>	<b>130.90</b>		<b>\$3,031.09</b>
FY 2004	President's Budget P-1R Submit	501.20	244.30	129.70	66.80	453.50	169.80	1,565.30	
	Congressional Adds to AC Accts for RC	290.80	6.70	63.39	0.00	45.40	0.00	406.29	
	NGREA	99.26	44.67	44.66	44.66	119.11	44.67	397.03	
	<b>TOTAL</b>	<b>891.26</b>	<b>295.67</b>	<b>237.75</b>	<b>111.46</b>	<b>618.01</b>	<b>214.47</b>		<b>2,368.62</b>
FY 2005	President's Budget P-1R Submit	586.80	302.50	127.20	55.60	425.80	134.70	1,632.60	
	Congressional Adds to AC Accts for RC								
	NGREA								
	<b>TOTAL</b>	<b>586.80</b>	<b>302.50</b>	<b>127.20</b>	<b>55.60</b>	<b>425.80</b>	<b>134.70</b>		<b>1,632.60</b>
	Note 1: USNR figures include USMCR aircraft procurement funds.								
	Note 2: The above figures do not include Ammunition procured for the RC.								

**VI. Status of Current Reserve Component Equipment**

Analyzing current equipment in the RC requires a look at several interrelated factors, such as equipment age, compatibility, interoperability, maintenance, modernization shortfalls and overall equipment readiness.

The Total Force integration policy has caused tremendous growth in the OPTEMPO and participation in ongoing military operations for the RC. We are also experiencing a significant increase due to recent and projected mobilization for the GWOT. This requires the RC to deploy with key equipment or to fall-in on pre-positioned equipment. Some RC units, notably the USMCR, are seamlessly integrated and train on the same modern equipment as their AC counterparts, while other RC units are struggling with compatibility and interoperability issues due to the magnitude of different types and models of equipment and cost of upgrading. The overall integration of the RC and AC is a delicate balancing act as requirements often outstrip available resources, and demand on those resources will likely increase.

Many RC units received a large portion of their equipment as the AC received newer, more modern equipment and transferred the older, less efficient, and less capable equipment to the RC. This transfer, although reducing equipment on-hand shortfalls, created a host of maintenance and compatibility issues. RC units often face the dilemma of receiving older equipment from the AC to fill RC requirement shortfalls, but lack the adequate resources necessary to repair and maintain this older equipment in proper war-fighting condition. In some instances, the commercial production lines to manufacture repair parts have shut down and parts are simply not available. Compounding this problem is the shortfall in RC full-time manning support, notably maintenance supervisors and technicians, needed to properly inspect the aged equipment upon receipt and to properly maintain the equipment after transfer.

Equipment cascaded to the RC is often at, or beyond, its original service life at the time of transfer and requires extensive overhaul to extend its useful service life. These repair and rebuild programs are costly and cause the RC to expend larger proportions of their operation and maintenance dollars.

Equipment modernization is an especially important issue for the RC. In the past, RC units have been precluded from mobilization because they did not have the most capable and modern equipment. RC aircraft units lacking the aircraft that employ the latest high tech instrumentation for navigation and armament delivery are a prime example of this problem. ***The magnitude of RC equipment modernization shortfalls is often hidden since the Services do not include equipment on the unit requirement documents if there is no possibility of obtaining the newer equipment in the near future. Thus, modernization shortfalls often represent unfunded procurement requirements.*** A list of the top priority RC modernization shortfalls is provided in Table 8 after each RC narrative.

The age of the RC equipment results in more than modernization shortfalls. In many cases, RC equipment, such as helicopters, trucks, armored personnel carriers and support equipment, is older than its pilots, drivers, and maintainers. The equipment requires considerably more maintenance and repair parts as it ages. Body metal rusts out, seals begin to leak, and engines fail. Maintenance costs increase and reliability decreases. Services have programmed for replacement vehicles and upgrades, but full replacement of the RC fleets will stretch far beyond the Future Years Defense Plan (FYDP). RC units have initiated SLEPs and partnered with industry in creative ways to leverage funding for interim solutions. In the meantime, many units must cross-level equipment in order to meet mobilization requirements for deploying units.

Another major factor on the status of current RC equipment, which has not yet been discussed, is related to OPTEMPO in OEF and OIF. For example, the USAR and ARNG ground equipment peacetime training usage is programmed for 3,600 to 4,800 miles per year. The equipment that has been deployed to support the war effort this past year will have accumulated 70,000 miles in an extreme sand and heat environment. The combination of these factors is greatly accelerating the limited life of the equipment. Future funding for the Services' depot maintenance and SLEP/ESP, versus the procurement of new equipment will pose a significant challenge to the Total Force for the foreseeable future.

## VII. Compatibility and Interoperability

DoD defines interoperability as the ability of systems, units or forces to operate effectively together. Compatibility is the capability of two or more items of equipment to function in the same system or environment without mutual interference.

DoD policy directs all AC and RC units that fight together to be equipped with sufficient quantities of compatible and interoperable equipment. Measurement of compatibility between equipment items and systems ranges from non-interoperable and incompatible to identical and fully interchangeable. Since identical type, model, and series equipment is not always affordable, the Services use a variety of approaches to increase compatibility.

Today, some AC and RC units are equipped differently, even when they are organized to accomplish the same or similar combat mission. Due to the high cost of modernization, the fielding of weapon systems frequently stretches over a number of years. As a consequence, some RC units are equipped with less modern equipment than their AC counterparts. This disparity occurs across all Services to varying degrees and raises concerns that Reserve units will experience increasing interoperability problems with their Active counterparts.

## VIII. Summary and Conclusions

Services have programmed an average of \$1.6 billion for new RC equipment annually since FY 1999 and have been programming larger RC procurement budgets in recent years. Despite these improvements, the RC still have challenges that interfere with full interoperability and compatibility with their AC counterparts. Combatant Commanders have stated that they are unable to logistically support deploying RC units with equipment that is not compatible and interoperable with their AC units. In addition, commanders do not want units with less than the most capable and modern equipment. Modernization shortfalls and aging equipment are a fact of life. Although extending the service life of older equipment may be economical in the near-term, old equipment soon becomes expensive to maintain and repair, and the costs are escalating.

The RC is expected to spend about \$2.4 billion in FY 2004, and an equivalent amount in FY 2005, for RC equipment procurement to reduce current shortfalls and also to replace older equipment with the more modern and capable models. Overall, the

percentage of total current equipment shortfalls has slightly decreased; however, the combination of interoperability and modernization requirements, and the maintenance and training costs of supporting older equipment with multiple versions continues to detract from RC readiness and mobilization capability.

## **Chapter 2**

### **United States Army Reserve Component**

#### **I. Army Overview**

a) Overall Army-wide Planning Guidance: The NMS provides the strategic guidance to fight and win a wide array of potential missions. Inherent in the NMS is the integration of the RC into a Total Force capable of supporting simultaneous missions across the spectrum of military operations. Properly equipping the RC with compatible, interoperable, and modernized equipment is an important part of this strategy. The Army supports this strategy through the “first to fight, first to resource” policy. This policy requires equipment be provided to units commensurate with their planned wartime deployment, regardless of component. The challenge is to modernize the RC with compatible, interoperable equipment within fiscal constraints.

Defense planning directs the Army to program sufficient forces to implement the NMS. Intrinsic in the Army's ability to support this strategic guidance is the integration of the AC and the RC into a force capable of multiple, synchronous, and compatible missions throughout the continuum of military operations. Early access to RC CS and CSS units is essential to deploy Army forces to a theater of operations and sustain the OPTEMPO throughout the duration and resolution of the conflict.

The Army Vision is "Soldiers on point for the Nation...Persuasive in Peace, Invincible in War." This Vision ensures that the Army fulfills its strategic responsibilities, continuously meeting the requirements of the National Security Strategy and the National Defense Strategy. The Army's Vision addresses three interwoven components: Readiness, People, and Transformation. The events of September 11, 2001 served to reinforce the Army Vision and to emphasize the requirement for transformation strategy. Equally paramount to its success are the pursuit of the GWOT, a strengthened Joint War-fighting capability, the development and execution of global engagement, counter proliferation of Weapons of Mass Destruction (WMD), and increased strength of our Homeland Defense measures. Overall, the Army continues to seek innovative strategies to accelerate transformation efforts over the next several years while maintaining vital capabilities in the near term.

The Army plan places combat forces and various support units into Force Packages (FP) designed to support the warfighting requirements of the Combatant Commanders. Currently, there are four force packages (FP 1 to 4) and two associated Force Support Packages (FSP) 1 and 2. These FSPs are funded by the first-to-fight, first-to-resource methodology that prioritizes programming and resources. These force packages also drive the Department of the Army Master Priority List (DAMPL), the Army Acquisition Objective, and modernization plans.

The RC provides CS/CSS units to the areas of operations through FSPs. FSP 1 is designed to deploy and support 4 1/3 divisions, Echelon Above Division (EAD) and Echelon Above Corps (EAC) units for one Corps, and the support elements to open one theater. This includes those forces essential to support forcible entry operations and the Continental United States (CONUS) support base required for mobilization and deployment. FSP 2 supports the deployment of one additional CONUS division, EAD/EAC for a second Corps, remaining theater support elements

for a theater of operations, and essential theater opening elements for a possible second theater. The remaining RC CS/CSS units are aligned with strategic force packages based on latest arrival date in a theater of operations.

The AC may require early access to specialized RC units for stability and support operations, for tailored rotational contingency requirements, and for deployment and sustainment operations, as occurred in OIF.

The Army has three methodologies for improving equipment readiness:

- **Modernize:** Develop and/or procure new systems with improved war-fighting capabilities.
- **Recapitalize:** Rebuild and selectively upgrade currently fielded systems to ensure operational readiness and near “zero time/zero mile systems.” There are two programs that accomplish this--rebuild and selected upgrade. Rebuild restores the system to a like new condition in appearance, performance, and life expectancy; and inserts new technology to improve reliability and maintainability. Selected upgrade is the rebuild of a system that adds war-fighting capability improvements to address capability shortfalls.
- **Maintain:** Repair or replace end items, parts, assemblies, and subassemblies that wear or break. The Army is changing from the three level maintenance concept (Organizational; Intermediate; and Depot) to a two level maintenance concept conducted at the Organizational and Depot maintenance levels.

b) Army Equipping Policy: The Army Equipping Policy (AEP), as stated in a Headquarters, Department of the Army (HQDA) memorandum, provides guidance for equipping all Army units. The AEP addresses modernization, force structure, and readiness requirements, and provides policy that guides the distribution of equipment throughout the Army.

The Army equipping goal is to provide fully equipped and modernized deployable forces capable of performing as components of a unified command or joint task force.

The AEP balances Army readiness against the needs of early deploying units by directing a two-step approach to distribution. First the Army ensures that all readiness-reporting units have sufficient equipment to meet minimum readiness standards. Then the Army fills unit requirements in first-to-fight/first-to-resource order in accordance with the DAMPL sequence, as amended by Army Orders of Precedence, Army Strategic Planning Board Decision, or with an approved out-of-DAMPL sequence fielding to support operational requirements based on unit missions.

c) Army Plan to Fill Mobilization Shortages in the RC: During a large-scale mobilization, the Army will employ the most practical and efficient means of redistribution. This includes issue of serviceable warehouse stocks, repair of unserviceable items, procurement and substitution of commercial equipment, cross-leveling of any excess unit equipment or equipment left behind by deploying units that acquire pre-positioned equipment. It also includes

unserviceable equipment that can be repaired quickly, including depot work in progress, National Inventory Control Point stocks, and new procurement.

Upon mobilization notification, all Army units will update equipment on-hand data in the Army master database called the Continuing Balance System-Expanded. This data, when matched against requirements documents by Materiel Management Centers, will highlight equipment shortages and excesses. Orders for lateral transfer and materiel release orders will then be issued. Each level of command will perform redistribution from within its own resources before forwarding unfilled requirements to the next higher echelon. HQDA will issue prioritization guidance for all AC and RC units based on the needs of the Combatant Commanders, with consideration for modernization, interoperability, and readiness.

The Army's plan to fill shortages within a mobilizing unit would follow the sequence below:

- Alerted headquarters would attempt to cross-level within its own units.
- Major Area Commands would attempt to locate external resources.
- Army would either release stocks from depot assets or direct distribution of assets in an out-of-DAMPL sequence fielding.

d) Current Army Initiatives Affecting RC Equipment: The Secretary of the Army and the Chief of Staff, Army, have restated the Army's Vision: "Soldiers on Point for the Nation, transforming the most respected Army in the world into a strategically responsive force that is dominant across the full spectrum of operations." As this vision evolves, the Army will transition to a lighter, more mobile force. As force structure, doctrine, technology, and equipment evolve in support of this vision, the strategies associated with equipping the RC will also change. Ongoing initiatives that affect the Army are listed below.

(1) **Anti-terrorism**: The Army is fully committed to the GWOT, executing critical tasks at home and abroad to preserve America's safety and security. These tasks are daunting because the Army must at all times carefully balance the needs of today; the "world as it is," with the needs of tomorrow; the requirement to transform forces, capabilities, and institutions to extend America's advantages well into the future.

Since the attacks on September 11, 2001, the Nation is reevaluating its requirements for both Homeland Defense and a long protracted GWOT. Homeland Defense requirements are ever changing and the GWOT is ongoing. The Army has a leading role in both Homeland Defense and the GWOT, and expects to begin incorporating force structure changes based upon these new missions.

(2) **Army Transformation**: Army Transformation is changing the way the Army will fight. Transformation will have a positive effect on the Army's near-term strategic superiority, as well as developing long-range solutions to continue dominance of future battlefields. With the Objective Force capability, the Army seeks to first gain situational understanding of the operational and tactical environment prior to employing larger forces. This will allow units to avoid initial contact until combat power is applied to overmatch the enemy

forces, while minimizing friendly casualties. This is a revolutionary change in war-fighting doctrine!

Army Transformation includes two broad vectors: the readiness and modernization of the Current Force, and the application of science and technology to achieve the Objective Force capability. It integrates transformational advancements in doctrine, training, leader development, organizations, materiel, and soldier systems while also incorporating changes in deployment, installations, sustainment, and business processes. In addition to transforming its operational forces, the Army will transform its generating forces – the Institutional Army. Studies and plans to accomplish this are well under way. For example, the Army is examining the structures of both the Training and Doctrine Command (TRADOC) and the Army Materiel Command (AMC) as part of the transformation of the Institutional Army. Since transformational change cannot be achieved on the margin of these institutions, a holistic solution must be developed to return resources to the warfighters. This will assist the Army in meeting its goal of increasing its tooth-to-tail (combat to support) ratio over this decade.

(a) **Transformation Timeline:** Transformation to the Objective Force is an ongoing process. As the backbone of the Objective Force, the Future Combat System (FCS) acquisition timeline begins to define the objective capability for the Objective Force. The Objective Force will field an initial FCS capability with programmed block upgrades. It is important to note that both technology and resources drive the timeline. In the meanwhile, the Army is in the process of converting six ARNG combat brigades to CS/CSS structure, taking the Army from 74 ground combat brigades to 68. This number of combat brigades will change based on the restructuring of additional ARNG combat brigades to CS/CSS units later this decade.

The Transformation Timeline depicts the conversion of units within the current Army to the Objective Force. The Army plans to convert three Current Force brigades per year to the Objective Force beginning in FY 2012. This timeline, coupled with the number of planned brigade conversions, clearly shows that the transforming Current Force will be the primary force that fights and wins our Nation's wars until FY 2016. At that point the Objective Force will consist of five divisions, comprised of 15 Objective Brigade Combat Teams, and will assume the first-to-fight mission. However, the Current Force will still be needed to supplement the capabilities of the Objective.

(b) **Objective Force:** The Army is transforming the world's premier land power to an Objective Force that is more responsive, agile, versatile, deployable, lethal, survivable, and sustainable. It will be dominant at every point on the spectrum of military operations. A force with these characteristics will have the ability to place a combat-capable unit anywhere in the world, regardless of accessibility to ports or airfields, in 96 hours, with a division on the ground in 120 hours, and five divisions in theater in 30 days.

The Objective Force is the Army's ultimate transformation goal. It is a future force that achieves the characteristics described in the Army Vision. The Objective Force will be a more strategically responsive Army, capable of dominating at every point on the spectrum of operations and will be capable of rapid transition between mission requirements without loss of

momentum. The Objective Force will be equipped with significantly advanced systems centered on the FCS. It will be commander and execution centric, networked internally and externally through a mobile, adaptive, reliable command and control capability. It will leverage joint and interagency reachback and direct downlink capabilities for intelligence, force planning, administration, technical engineering, information operations and logistical support.

(c) **Current Force:** The Current Force must be prepared to fight and win the Nation's wars until transformation is complete. For this reason, the Army needs to continue to invest in the Current Force, which will be with us until the Objective Force is completely fielded. However, because resources are limited and requirements are abundant, the Army must balance risk with current and future force requirements. As an initial step in transforming the Current Force, the Army has funded six interim brigades that will be trained and ready to deploy to provide the Combatant Commanders with an increased land power option. Two combat brigades at Fort Lewis, WA, are currently in the process of converting to STRYKER Brigade Combat Teams (SBCT). Additional SBCTs are programmed for Alaska (172<sup>nd</sup> Infantry Brigade), Louisiana (2<sup>nd</sup> Armored Cavalry Regiment), Hawaii (2<sup>nd</sup> Brigade, 25<sup>th</sup> Infantry Division) and Pennsylvania (56<sup>th</sup> Infantry Brigade, Pennsylvania ARNG). The recommendation of the Quadrennial Defense Review may result in the placement of an SBCT in Europe by FY 2007.

(d) **CSS Transformation:** The Army Deputy Chief of Staff, G-4 (Logistics), oversees CS/CSS Transformation within Army Transformation. The goal of Army CS/CSS Transformation is to ensure that Army forces are capable of rapidly deploying in support of current and future operational force deployment goals and can effectively support and sustain the full spectrum of Army operations, while synchronizing Army and Joint efforts to: (1) enhance Strategic Responsiveness and meet deployment timelines, (2) reduce the CS/CSS footprint in the Battle Space, and (3) reduce the cost for the generating and sustaining forces without reducing war-fighting capability. Critical components of the transformation process are: improved information technology and systems, technology insertion, business process changes, battlefield distribution streamlining, and modular organizational designs, which yield a new or enhanced capability tailored to meet a recognized requirement.

Consistent with the Army Vision and the Army Transformation Strategy, CSS Transformation, in the long term, focuses on migration to a fully integrated information infrastructure that enables readiness-based, platform-centric logistics management on a global basis. The key issue will be meeting the deployment milestones of the Army Vision, while at the same time reducing both the demand for strategic lift and the logistics footprint in the tactical battlespace. This will require further reengineering of business processes, improving distribution platforms, enhancing the deployment process, improving strategic and intra-theater lift capabilities, and developing technologies that contribute to reduced logistics demand.

(3) **Recapitalization:** It is the Current Force that is responsible for the Army's near-term war-fighting readiness. Because the Army skipped a procurement generation during the 1990s and into the 21<sup>st</sup> century, the age of many of the Current Force's combat systems exceed their expected service life, which is 20 years for most Army systems. Today, 75 percent of the Army's major combat platforms exceed their expected system half-life. In order to maintain operational readiness and to stabilize the growth in the operating and support costs of

the Army's aging weapon systems, the Army has begun to recapitalize and selectively modernize its Current Force.

The Recapitalization Program consists of the rebuilding and selected upgrading of fielded systems to ensure operational readiness and near "zero-time, zero-mile" characteristics. The Army Recapitalization Strategy follows two paths: rebuild, and selected upgrade. Rebuild restores a system to a like-new condition in appearance, performance, and life expectancy. It inserts new technology where practical to improve reliability and maintainability. The result of a Recapitalization rebuild is a same model system with a new life. Selected upgrade improves the systems and adds new war-fighting capabilities that address previous system shortcomings. The result of a Recapitalization selected upgrade is a new model system with a new life and improved war-fighting capabilities.

When operationally necessary and financially prudent, the Army will selectively upgrade systems to maintain combat overmatch capability and a technological advantage. Recapitalization efforts will focus on improving the reliability, maintainability, safety, and efficiency of the Army's current systems at a lower cost than procuring new systems. The Army's requirement to recapitalize all of its systems is significant and the requirement is clearly unaffordable, given the current fiscal constraints and planning guidance. Therefore, the Army has decided to focus its resources on only those systems and units that are absolutely essential to maintaining today's war-fighting readiness, while taking risk with other systems and other parts of the force. In order to develop an affordable and executable recapitalization program, the Army has prioritized seventeen of its systems for recapitalization to a near zero-time/zero-mile standard. The "Army's Prioritized Recapitalization Program," in addition to selecting only 17 systems, also focuses its resources on the Counterattack Corps.

While the Recapitalization Program approval process has helped the Army focus its resources, reduce requirements, and develop cost effective funded programs, the Army must still remain cognizant of the inherent risk in this program. Even for these 17 systems, the Army still has significant requirements for systems that reside in other units besides the Counterattack Corps. The majority of the remaining systems will not reach an average half-life by FY 2010, and a large proportion of those systems will not be upgraded or rebuilt. As a result of its Recapitalization Strategy, the Army has provided critical combat capability to the Counterattack Corps, accepted prudent risk in its remaining units, and established a process that will help free up resources for the Stryker and Objective Force. The Army will continue to review the scope of its recapitalization requirements each year and make adjustments as appropriate.

(4) **Modernization:** The Army focused the modernization of its Current Force by identifying and prioritizing those systems that have applicability to the Objective Force. These systems can be classified into two categories: those that are part of the Current Force and will transition with us to the Objective Force (Family of Medium Tactical Vehicles (FMTV) and Javelin), and those that are being built specifically for the Objective Force, but can be used by the Current Force (Tactical Unmanned Aerial Vehicles (TUAV) and Highly Mobile Artillery System). By doing this, the Army is ensuring that its resources are efficiently spent on systems that will benefit it now and in the future. In an effort to accelerate transformation to the Objective Force, the Army accepted risk by focusing modernization efforts on selected units and

capabilities. Only the Counterattack Corps, some XVIII Airborne Corps units, and the Interim Force will receive the system upgrades and digitization capabilities necessary to modernize to the Objective Force.

(5) **Multi-Component Units (MCU):** An MCU combines personnel and/or equipment from more than one component on a single authorization document. The intent is to maximize integration of AC and RC resources. MCUs have unity of command and control similar to that of single component units. MCU status does not change a unit's doctrinal requirement for personnel and equipment, force packaging, or tiered resourcing. No limit has been established for the number of units that may become MCUs, with the concept available to both AC and RC units. MCU selection is based on mission requirements, unique component capabilities and limitations, readiness implications, efficiencies to be gained, and the ability and willingness of each component to contribute the necessary resources.

As of September 2003, there were 75 units identified as MCUs through FY 2007. The USAR will be the flag holder for 34 units and will provide elements for 26 other MCUs. The ARNG is slated to be the flag holder for two units and will provide elements for 17 other MCUs. The USAR and the ARNG will participate in 11 MCUs comprised of all three Army components. These numbers will change as the program continues to grow.

(6) **Army National Guard Division Redesign Study (ADRS):** The Secretary of the Army approved the ADRS four-phased plan to convert up to 12 ARNG combat brigades, and slice elements (approximately 48,000 personnel) from two ARNG combat division equivalents, to required CS/CSS structure. A force feasibility review confirmed the conversions recommended by the Total Army Analysis (TAA)-09 Resourcing Conference Council of Colonels. ADRS is included in all Force Validation Committee reviews.

Approximately \$2 billion was programmed to resource Phases 1 and 2 of ADRS. This will convert six ARNG combat brigades to CS/CSS units. Additional resources will be identified and applied in future budgets through FY 2009. The Army's TAA process will determine the types and number of units available for Phases 3 and 4.

(7) **Homeland Defense:** In FY 1998, DoD established ten 22-person Rapid Assessment and Initial Detection (RAID) teams, now designated "WMD Civil Support Teams" (WMD CSTs). These National Guard teams support civil authorities at a domestic Weapons of Mass Destruction (WMD) incident site by identifying WMD agents/substances, assessing current and projected consequences, advising on response measures, and assisting with appropriate requests for state support. In FY 1999, Program Budget Decision 709 established seventeen additional teams for FY 2000, and the FY 2001 National Defense Authorization Act directed the Army to establish an additional five teams for a total of 32 WMD-CSTs in 31 states. Another 23 teams were authorized by Congress in FY 2003, bringing the total number of WMD CSTs to 55. Of the 23 new teams, 12 will be established in FY 2004 and the remaining 11 will be established by FY 2007.

(8) **OEF and OIF:** The mobilization requirements of OEF and OIF prove there is no discrimination between Force Packages 1 through 4 units when mobilizing. The best resourced units were not always deployed first. As a result, the RC was forced to redistribute assets internally throughout the force to meet the requirement, both prior to and during the mobilization of units. The increased readiness targets for unit deployments and the additional equipment requirements beyond normal authorizations exacerbated the original minor shortfalls. Lower priority units have never been resourced above 70 percent Equipment On-Hand (EOH) but were required to mobilize at 90 to 100 percent. This change in mobilization requirements resulted in the depletion of equipment in those RC units that were not immediately mobilized. As a consequence, stay behind units losing equipment to cross-leveling are unable to maintain their training proficiency.

Army leadership realizes that providing RC units with the latest force protection equipment is a top priority. Items like individual soldier protective armor vests, night vision devices, and the M1114 Up-Armored High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) are essential for RC units to meet the high OPTEMPO of today's Outside the Continental United States (OCONUS) operations. The shortage of Single Channel Ground Air Radio System (SINCGARS), the Army's standard for tactical secure communications, is another area that created mobilization problems during OEF and OIF. SINCGARS were often cross-leveled without accessory equipment or unit training for radio operators. Units often addressed these shortfalls after they fell in on their equipment overseas.

During mobilization for OEF and OIF, RC units faced many maintenance readiness challenges. Lack of available parts for substitute items enlarged the logistics footprint in country by increasing the amount of effort required to support in-lieu-of items and cross-leveled equipment. The majority of RC equipment is a generation behind the AC. The resulting incompatibility creates a host of maintenance challenges, to include a lack of Army training programs for operators and mechanics and the establishment of separate repair parts inventories, special tools, and test equipment.

e) Army Plan to Achieve Full Compatibility Between AC and RC: The Army maintains a doctrinally integrated series of organizational designs for the purpose of achieving operational compatibility between types and echelons of units. Every effort is made to equip and modernize the AC and RC so that they remain an integrated team. Due to constrained resources, incremental improvements have been determined based on the first-to-fight/first-to-support principle.

The budget trend the last few years was positive because NGREA funds were used to reduce equipment shortages in high priority units when Army procurement money was unavailable. Considering the reduction in NGREA funds since 1998, the Army budgeted more in their annual budgets for the RC and Congress added more money to active accounts for RC specific equipment. Despite these increases, the RC still has significant equipment shortages, especially in the most modern equipment. Consequently, the RC must increasingly rely on limited overhaul and rebuild programs of existing equipment to retain mission capabilities.

Recapitalization may include pre-planned product improvements, extended service programs, and major modifications. However, these programs alone do not constitute recapitalization unless the system is restored to a near “zero time/zero mile” condition.

Since 1997 ARNG and Army Reserve procurement has been included in the FYDP. This ensures visibility of funds for improvements in equipment compatibility between the AC and RC.

f) EOH Substitutes: The equipment on hand in *Table 1* includes authorized substitute equipment. Substitute LINs are reported as assets on-hand and are included in equipment totals for unit status reporting purposes. Army regulations define authorized substitutes as any piece of equipment that is able to perform the same function and purpose as the authorized equipment, but generally not to the same level of performance and efficiency. If substitute items of equipment are used, they are listed along with the quantity and item substituting for the prime LIN in *Table 7*.

An authorized substitute item, which is designated as on-hand equipment does not exempt the unit from placing the authorized equipment on a valid requisition. Therefore, the requirement for the authorized item is still valid. Inclusion of authorized substitutes tends to skew the shortages of primary equipment, but better depicts a more accurate equipment status of the RC. **Without the use of authorized substitute equipment, the Army's equipment posture, both AC and RC, would be degraded.**

g) Summary and Conclusion

The RC has been called upon to provide individuals, units, and equipment to support on-going military missions, from OIF, Homeland Defense and the GWOT, to peacekeeping operations.

In preparation for a deployment, the AC cross-levels equipment, steps up training, and in some cases provides modernized equipment to RC units. However, in efforts to meet mobilization requirements, RC units often have to "come as they are, with no intended equipment upgrade." In other words, RC units bring with them the equipment currently in their inventories. In many instances units bring significantly older equipment with reduced capability and decreased reliability to the war fight. The equipment, in many cases, is many years past its useful life, especially in the CS/CSS arena. Furthermore, repair parts inventories, which have been reduced under cost saving measures during the past several years, are no longer available for this outdated equipment.

Exacerbating the problem of RC readiness is the fact that the RC is still not fully equipped to meet the readiness requirements in either the NMS, identified in 1996 by the Assistant Secretary of Defense for Reserve Affairs, or the Transformation Campaign Modernization Plan. Although the Army has made significant strides to better equip the RC, there are still significant equipment disparities between the AC and the RC. Depot maintenance accounts, which are undercapitalized at only a fraction of what is needed, intensify the difficulty the RCs experience maintaining equipment required for the Army Recapitalization program. War reserve secondary

items, a prerequisite for CSS units to fulfill mission requirements, are also undercapitalized. Withdrawing funds from the Recapitalization Program places increased reliance and strain upon procurement dollars.

The RCs are experiencing significant difficulty in meeting the requirements to modernize while maintaining compatibility and interoperability with the AC to conduct current operational requirements. Funding for CS/CSS equipment is frequently decremented in favor of combat equipment. Since both the ARNG and USAR comprise a significant percentage of the Army's CS/CSS force structure, it is clear that funding for this requirement is seriously impacting on the RC units' ability to complete assigned missions.

## II. Army National Guard (ARNG) Overview

### a) Current Status of the ARNG

#### 1) General Overview

The ARNG over the last year has mobilized forces in excess of 70,000 personnel in support of Army missions for Homeland Defense, OIF, and OEF (Afghanistan). This was in addition to its normal training and state missions and peacekeeping missions in the Sinai and the Balkans. The ARNG is currently planning and cross-leveling equipment in preparation for continual rotation of ARNG units to support all these contingencies. The Army recently announced that two ARNG Enhanced Brigades (eSB) would deploy to augment two active duty divisions in Iraq starting in FY 2004.



**ARNG Soldier On Patrol In Iraq Wearing a Protective Armor Vest and a Helmet Bracket for Mounting a PVS-14 Night Vision Device**

The ARNG eSBs (one light/one heavy) are deploying to fall in on an equipment configuration that will change their force structure to a more medium, more HMMWV based organization. To prepare for this, the ARNG is creating training sets of HMMWVs and other equipment at Army training facilities for these units to train in scenarios they will encounter in Iraq. This requirement has caused the ARNG to reduce the majority of units' inventories of some items to only 65 percent of their authorized systems. These shortages will have a negative impact on unit training and will additionally challenge the States/Territories in filling shortages as they are tasked to mobilize more units. The ARNG will rely on Congressional adds and discretionary funding such as NGREA to procure replacements. The ARNG will also continue to use its limited depot and operational dollars to maintain and repair equipment.



**Army Stryker Brigade Equipment During Training. The ARNG's 56 Infantry Brigade, 28<sup>th</sup> Infantry Division (Mechanized) of the Pennsylvania ARNG will convert to a Stryker Brigade by FY 2010**

The leadership in the ARNG has made it a top priority to provide ARNG units with the latest force protection equipment available from the Army. Primarily this involves individual soldier protective armor vests, night vision devices and the M114 Up-Armored HMMWV for light unit force protection. The key mobilization equipment shortages are listed on page 2-12 and the overall modernization requirements are indicated throughout the narrative and in Table 8.

The Army is continuing to modernize the ARNG through force structure redesign such as the ADRS and the Stryker Brigade

conversion of the 56th Infantry Brigade in the Pennsylvania ARNG. The Army also continues to cascade equipment to purge the obsolete systems and field new equipment for unit conversions and activations. Still, the ARNG has continued to rely on Congressional adds and NGREA procurement to fill shortages across the ARNG and has now shifted its focus to filling shortages and modernizing select equipment for combat brigades scheduled for mobilization for contingency rotations.

The ARNG's combat brigades consist of 15 eSB's, as well as divisional brigades and other separate brigades. The eSBs have been modernized to near commonality with AC units while the divisional and other separate brigades are far less modernized and have more equipment shortages. To meet its missions for Homeland Defense and OCONUS mobilization requirements the Army has become heavily dependent on these less modernized brigades and support units. To prepare these units for mobilizations has required significant cross-leveling of equipment from all the States/Territories of the ARNG, as well as a significant investment in OPTEMPO funding for transportation of equipment, maintenance, and auxiliary equipment.

## 2) Status of Equipment

(a) EOH: The Army has invested heavily over the last few years in modernizing and filling equipment shortages in units designated as early deploying units to support Army contingencies. Unfortunately the best-resourced units are not always the units requested for mobilization. The ARNG divisional brigades are the least modernized and required extensive cross-leveling at the expense of the EOH of the better-equipped units. Unit equipment or EOH is reported using the "must have items" equipment that is essential to the unit's mission. A majority of ARNG lower priority units have never been resourced above 70 percent for EOH but were required to mobilize units at 90 to 100 percent for all items of equipment. Auxiliary equipment and auxiliary support equipment are often under funded and filled through cascade.

This dilemma has created a significant burden on the ARNG equipment management system to cross-level to fill shortages and expend large levels of funding without providing additional resources to requisition shortages. The States and Territories were directed to fill shortages of their mobilizing units by internal cross-leveling if possible. The ARNG then attempted to fill the remaining shortfalls by directing State-to-State transfers. In state transfers were not reported to the ARNG, but during the time period of 1 September 2002 through 16 May 2003, the most significant period of alerts and mobilizations, 5,171 items (190 different types) were directed to be cross-leveled between 49 losing states and 44 gaining states. The following chart indicates some of the items that were the top reported cross-leveled shortages and challenges to mobilization.

### **Six Most Cross-Leveled (State-to-State) Equipment Items During Alert and Mobilization**

- Night Vision Goggles (Overall short 110,000 PVS-7 & PVS-14)
- Chemical Agent Monitors/Alarms (Overall short 8,200)
- Semi-Trailers (Overall short 2,419 of M871 series, and 655 of M872 series)
- 5 Ton Dump Trucks (Overall short 765 ea. of the M900 series and newer)
- Line Haul Trucks M915 Series (Overall Short 440)
- SINCGARS Radios (Overall Short 20,000 radios)

While cross-leveling successfully allowed the ARNG to meet its mobilization requirements, it had a detrimental effect on the EOH of the donor units. Loss of equipment by units has detrimental effect on capability, training proficiency and morale.

The reconstitution of de-mobilized units will remain a concern due to the potential that equipment may not return and there may not be adequate funding for the intense maintenance needed to return equipment to a ready status. The ARNG will continue to use NAREA supplemental funding to procure shortage/modernization equipment primarily for HMMWVs, night vision goggles, SINCGARS, and trucks for pending mobilizations. Another challenge will be the funding of essential clothing items such as body armor, cold weather equipment, sleeping bags, and other accessory equipment.

The ARNG's top modernization priorities and existing shortages are discussed below and are shown in Table 8.

(1) Aviation

- Attack Helicopters: The AH-64D Longbow is the Army's premier attack helicopter and replaces the AH-64A model, which is being cascaded to the ARNG to fill attack helicopter shortages within the attack structure. While equipment cascade replaces aircraft, it does not improve current readiness problems in the ARNG's aviation fleet. The ARNG's aircraft are one generation or more behind the AC in model modernization. Additionally the funding requirements for support equipment and tools and accessories for cascading aircraft was not programmed initially and is coming from funding that would have supported the aircraft recapitalization program; delaying and/or curtailing that program.



AH-64D LONGBOW APACHE HELICOPTER

- Utility Aircraft: The planned retirement of the UH-1 Huey fleet in FY 2004 and its replacement with UH-60 Blackhawk will reduce the ARNG utility aircraft fleet to one type of airframe. The UH-60 fleet is predominately made up of the UH-60A, which are only a couple of years newer than the UH-1. All UH-60s are scheduled to be rebuilt into modernized UH-60M models. The Army's decision to reduce the number of aircraft per unit in order to create sufficient aircraft to fill ARNG shortfalls has created a situation where the early model UH-60As cascaded to replace the UH-1s are only a couple of years newer than the aircraft they replace. The program has been delayed and/or curtailed due to current worldwide operations and is now expected to fall short in generating sufficient aircraft to fill shortages. The shortage of UH-60s causes 100 percent of the aircrews to operate on average 50-60 percent fill of aircraft causing additional wear



UH-60 BLACKHAWK UTILITY HELICOPTER



UH-60 BLACKHAWK AIR AMBULANCE

on the aircraft and an increase in readiness problems. The ARNG needs an annual procurement of the latest model UH-60Ls to fill shortages and modernize its fleet.

- Air Ambulance Aircraft: The ARNG continues to experience a shortfall in the UH-60 airframes that are needed to replace the UH-1 air evacuation fleet. Additionally, to be Fully Mission Capable, Air Ambulance aircraft require Aeromedical Evacuation Kits or “Q kits” modifying them to the UH-60Q or HH-60L. The ARNG is still projecting a shortage of 171 of these kits.

- Cargo and Aircraft: The Army cargo aircraft is the venerable CH-47 and the ARNG has a mixed fleet of “D” and “F” models. The Army is modifying all but 96 of its CH-47D cargo aircraft fleet to the “F” model with the majority of the unmodified aircraft in the ARNG. The Army procurement objective needs to be increased to convert the entire fleet to the “F” model, which will modernize all aircraft to the same configuration.



CH-47 CARGO AIRCRAFT

- Reconnaissance Aircraft: The Reconnaissance Aircraft fleet consists of the now obsolete OH-58 and newer OH-58D (Kiowa Warrior). Under the ARNG Aviation Transformation and Modernization Plan, reconnaissance companies will be resourced with new armed reconnaissance helicopters. Current plans are for the AH-64A Apache to be placed in the six Divisional Cavalry squadrons as in lieu of interim aircraft with a fill of 16 required/8 authorized, resulting in a overall shortfall of 48 reconnaissance aircraft. However, the ongoing operations in Iraq and Afghanistan have substantially impacted this plan.



AH-58D KIOWA WARRIOR

## (2) Combat Tracked Systems



M2A2 Bradley Fighting Vehicle Conversion to ODS is funded by Congressional Adds

- M1A1 Main Battle Tank and M2/3

### Bradley Fighting Vehicle (BFV):

The Army has digitized its legacy ground heavy force to the M2A3 BFV and the M1A2 Abrams Main Battle Tank. The ARNG plans to continue converting the present M2A2 Bradley fleet, mainly located in the eSBs



M1A1 MAIN BATTLE TANK

to the Operation Desert Storm (ODS) version, which provides a compatible digitized capability. The ARNG remains dependent on the cascade of M2A2 and M1A1 to close the technology gap for its heavy force. The objective remains to have three ARNG Heavy Divisions fielded with M2A2 and

M3A2 CAV and all eSBs completely fielded with M2A2 ODS BFVs by the end of FY 2008. This plan will continue to rely on annual congressional additions to the procurement budget to fund the modernization program of M2A2 BFV to the M2A2 ODS model. The ARNG will have a similar problem in that it's M1A1 main battle force will not have the commonality of digital upgrades being fielded in the M1A2. This creates a problem in command and control and/or coordination operations in support of contingency missions without full use of digital advantages.

- M113 Family of Tracked Vehicles: These vehicles include armored personnel carriers, support vehicles, command and control vehicles, armored ambulances, support vehicles and M109 self-propelled howitzers. The ARNG is still trying to purge the obsolete A2 and earlier systems from the fleet and modernize to the A3 models. The A2 models are considered too slow to keep up with the M1A1 equipped fighting force. The ARNG is also seeking to purge its remaining M109A5 and older 155mm self-propelled howitzers with the M109A6 Paladin system, which are no longer under procurement by the Army. The Army no longer is procuring the M113A3 variants, and the ARNG anticipates continued cascades as the Army fields its STRYKER brigades and Future Combat System (FCS) to its Future Force units. The ARNG still has over 8,000 of these systems and expects them to remain in the inventory for another 15 to 20 years.



M113A3 ARMORED PERSONNEL CARRIER

Another problem in purging these obsolete tracks from the system is the Army's inability to deal with the backlog of over a thousand excess vehicles that are spread throughout the ARNG and are awaiting disposition for turn-in to the Army for removal from the inventory. These tracked vehicles take up valuable space and absorb man-hours and funding to keep them serviceable while pending turn-in.

### (3) Tactical and Support Vehicles

- Light Medium Tactical Vehicle (LMTV): The LMTV is the 2-½ ton vehicle in the Army inventory of the new FMTV. The LMTV has been partially fielded to the ARNG and is primarily being procured for the ADRS activating units, and the predominant system of the ARNG is the M35A2 variant. The limited fielding of LMTVs is dedicated to the activating ADRS units, which currently have M35A2 variants or shortfalls. The ARNG anticipates its M35 fleet will not be replaced until at least FY 2020, and will rely on Congressional adds and NGREA procurements to eliminate it's M35 fleet.



M1078/1081 2 ½ TON CARGO

- Medium Tactical Vehicle (MTV) Family (5 Ton Variants): The Army is continuing to field the MTV of the FMTV to modernize the ARNG fleet and eliminate obsolete vehicles. The 5-ton MTV variants include cargo trucks, wreckers, and tractors that pull the M871 Stake and Platform Trailer.

The 5-tons that are older than the 900 series fleet are the M800 and M54 series, which are the most difficult to maintain because of the difficulty of locating repair parts. The ARNG's immediate goal is to eliminate the 8,800 M800 series and older vehicles through new procurement and cascade.



**M1088 5-TON TRACTOR & SEMI TRAILER  
22 1/2-TON (M-871A3)**

As one of the largest Army procurement programs for wheeled tactical vehicles, funding for this program has been frequently decremented to fund other Army priorities. As a result, FMTV procurement for the ARNG has been lower than originally projected.

One of the key transport systems in the ARNG is the 5-ton tractor (M1088) and the M871A3 22-½ ton trailer. This tractor-trailer combination allows the ARNG to accomplish both state and federal missions and helps reduce operating costs of moving supplies. There is no planned procurement to fill existing shortages and the ARNG will continue to rely on NGREA discretionary funds to procure tractors and trailers and other 5-ton variants to fill these critical shortages.

- Heavy Expanded-Mobility Tactical Truck (HEMTT): The HEMTT is the workhorse for forward logistical support in the heavy combat forces and support units. The HEMMT Cargo series is the prime vehicle for supplies such as ammunition, while the HEMMT Tanker is a 2,500-gallon capacity fuel tanker capable of traversing most all terrain. Additionally, the tanker provides the capability for quick refuels of both aircraft and combat vehicles forward on the battlefield under safe handling conditions.



**HEMTT M984 10-TON WRECKER**

Wreckers, is one of the most significant shortfalls in the ARNG because there are no authorized substitutes. Five-ton cargo vehicles can be used in lieu of 10-ton HEMTT cargos at half the capability, which is a significant shortfall for units like the field artillery, which become dependent on outside assistance to haul their ammunition basic load. For vehicle recovery operations the 5-ton wrecker cannot fulfill a mission for which a 10-ton HEMTT wrecker is required. Not only does this create a capability shortfall but it also can present significant safety concerns in many situations. The ARNG over the last few years has used NGREA to procure HEMTTs to accelerate the fill of shortages and provide some capability across all states.



**HEMTT 2500 GAL FUEL TANKER**

- **M915 10 Ton Tractors and M872 Trailers:** The M915 tractor and the M872 trailer is the Army's primary long-haul hard surface tractor-trailer combination. Each medium size truck company is equipped with 61 tractors and 120 trailers. The ARNG currently has 70 percent of its M915 tractor requirement on-hand with a shortage of 543, but only 494 out of 1,270 on-hand are of the M915A3 model. Since there is no Army recapitalization program to modernize the older model M915 tractors the ARNG will rely on Congressional adds to procure additional M915A3 tractors and M872A1 trailers to fill shortages and modernize the fleet.



**M915 TRACTOR & M872 TRAILER**

- **HMMWV:** The HMMWV family of vehicles is the Army's lightweight 4X4 vehicle that serves a variety of duties from troop and shelter carrier to weapons system carrier. The continued shortage (currently 12,567, projected through FY 2007 requirements) of the different variants continues to be the ARNG's most significant shortage in the tactical wheeled vehicle fleet. The Army's transformation to a lighter force will continue to increase these requirements and future procurement will, at best, only fill new requirements.



**M998 HMMWV TROOP CARRIER**

The ARNG has relied on limited cascades and procurement through Congressional adds and NGREA to fill shortages in low priority units. The majority of the shortages are in the basic M998 model, which the Army no longer procures.

The ARNG fills shortages for the lowest priority units using the 1980 era Commercial Utility Cargo Vehicle (CUCV) series of vehicles, which was retired by the Active component seven years ago and is no longer deployable/supportable by the Active component. The overall shortage is a primary problem for the ARNG in filling mobilizations and modernizing force structure and is expected to remain a top priority of the ARNG over the next decade.

It's anticipated that the Army may task the ARNG to provide several hundred HMMWVs



**M1025 HMMWV WEAPONS CARRIER**

for forward stationing overseas to support peacekeeping and other contingency missions. The primary model is expected to be the M1025 & M1026 HMMWV Weapons Carrier. The fielding of the M1114 Up-Armored HMMWV was expected to replace this vehicle in ARNG ADRS Military Police (MP) units with the excess used to fill shortages in newly activating units.

The loss of these vehicles from the inventory increases the risk for the ARNG that the units activating under ADRS and other programs may not be able to meet their activation timelines and that other lower priority units will continue to experience large vehicle shortages.

The ARNG will continue to rely on Congressional adds and NGREA funding to modernize its HMMWV fleet and fill the shortages in its lower priority units. The ARNG will need to acquire an additional new procurement of at least 300 vehicles a year through Congressional adds and/or NGREA above what the Army currently fields in order to maintain the pace of activations/mobilizations and fill current shortfalls.

- Up-Armored HMMWV M1114: This HMMWV variant has added ballistic protection against small arms fire and small mines. The vehicle is the primary weapons carrier for ARNG MP units and will be an integral component of the future years Army National Guard Restructuring Initiative (AGRI) as the Army modernizes the oldest combat brigades to the Mobile Light Brigade (MLB) force structure. The Army has developed ad hoc requirements for M1114s to be used to supplement or replace armored vehicles for units to use in support of operations in Iraq. This requirement has caused a withdrawal of all M1114s from the ARNG inventory and has caused a significant problem as projected deliveries for ARNG MP units have been delayed and existing vehicles have been diverted to Iraq.



M1114 UP-ARMORED HMMWV

Newly activating ARNG MP units that were expecting to be fielded with M1114 will have to use substitute vehicles that are already in short supply. The M1114 is considered to be critical to the ARNG for force protection of its troops during OCONUS mobilizations, Home Land Defense and for modernizing all its MP units for all missions. The ARNG will continue to rely on Congressional adds and procurement using NGREA to fill requirements for pending mobilizations and to fill MP unit shortages which are not part of the current ADRS program.

#### (4) Communications-Electronics Equipment (C-E)



SINCGARS RADIO

- SINCGARS: SINCGARS is the Army's tactical communication standard for tactical secure communications. The ARNG is 20,000 systems short in replacing its obsolete 20-30 year old VRC-12 series radios with SINCGARS systems. The shortage of this system has created mobilization problems, as radios have to be cross-leveled inside states and between states in order to provide the modern capability required for mobilization. The Army has been providing a cascade of older model SINCGARS radios to fill shortages over the last few years. The inventory of suitable radios for cascade has almost been expended and future fieldings will require either new procurement or the fielding of new systems to Active component units in order to generate excess. An additional problem in the SINCGARS cascade or fielding is the funding for total package fielding, accessory equipment and training of units. The ARNG has invested an average of \$15M per year over the last four years of its limited operational dollars to

fund these costs. SINCGARS procurement is another area that is dependent on Congressional adds and NGREA funds to fill shortfalls.

• NVG: The low percentage of fill in the ARNG inventory of NVGs (27 percent) is one of the current significant shortfalls in equipment on-hand and one of the primary concerns for mobilizing units. The requirement for these devices has steadily increased faster than the Army can procure them and these systems are typically the number one shortage/



PVS-14 NIGHT VISION MONOCLE

modernization issue for most deploying units. The PVS-7D and PVS-14 are standard devices for ground units and are especially critical for combat units. For aviation units the latest model under procurement is the AN/AVS-6 (V) 3. The Army has decided the PVS-14 is better suited as the primary NVG for ground operations over the PVS-7 because of its lighter weight



AN/PVS-7D NIGHT VISION GOGGLE, Currently short 110,000

and monocular versus binocular advantage. The ARNG continues to rely on Congressional adds in the form of NGREA funds to procure NVGs to fill shortages and modernize to meet deployment requirements.

• Forward Area Air Defense Command Control and Intelligence System (FAADC2I): This system is a battle management/command, command and control system that provides air situation awareness to other Army Battle Command Systems. As a result of current Army funding cuts, the ARNG has lost all funding for FY 2004-2009 in the remaining un-digitized Avenger Air Defense Battalions. Once units without FAADC2I receive the Sentinel Radar system their efficiency/capability will only be ten percent of units with FAADC2I. It is critical for the remaining Avenger Battalions to be fielded FAADC2I to remain relevant in the war fight and to give them a comparable capability to the other Army Avenger Battalions. This is a critical shortfall for both the homeland defense mission as well as OCONUS contingencies.



TACTICAL QUIET GENERATOR

and 5KW model. Current fielding of 5-60KW generators are primarily for high priority units and if funding remains constant, the completion of the fielding will take eight to ten years.

• Power Generation: As the Army transforms, the power generation requirements continue to increase to support the new systems being fielded. The ARNG goals in power generation are to eliminate the obsolete gasoline generators (single fuel requirement) and eliminate unreliable, obsolete models of diesel generators to improve readiness. Generators range from the smaller 3 and 5 Kilowatt (KW) capable models up to the larger 30KW and 60KW models. The Tactical Quiet Generator (TQG) is being fielded by the Army to achieve these goals. The majority of the ARNG's TQG shortfall lies in the smaller 3KW

• Small Arms Modernization: The ARNG is reevaluating the authorization for small arms assigned as individual weapons based on combat experience reports coming from Iraq and Afghanistan. In some cases the M16A2, the standard issue weapon, is considered to be too cumbersome for operation from within vehicles, or tight confines. The M9 9mm pistol is the standard issue hand gun and while small and compact it does not provide the necessary fire power for close protection in certain



scenarios. The recommendation is to replace both of those with the M4 carbine, which is a smaller, more compact version of the M16A2. Additionally the M240B is the modern replacement medium machine gun for the Vietnam era M60 machine gun and has been listed as a critical need by commanders for use in Iraq and Afghanistan. The ARNG is working with the Army to receive more M4s and M240B and is using FY 2004 NGREA funds to procure several thousand M4s and several hundred M240B for issue as replacement weapons for units in Iraq and Afghanistan

The PAQ-4 infrared illuminator is mounted on the M16 or M4 and provides the ability to illuminate targets at close range with a light that is observable through night vision goggles. The ARNG is short over 10,000 of these devices and is going to use FY 2004 NGREA to procure the newer model PEQ-2 for ARNG units in Iraq.

(b) Average Age of Major Items of Equipment: The ARNG's primary compatibility concern of the ARNG with its on-hand inventory is the fact that the primary systems are aging faster than they can be replaced or rebuilt. The majority of the ARNG's equipment was received through cascade from the AC already near the end of its projected service life. The ARNG relies heavily on its depot maintenance programs to keep readiness rates at or near the Army's standards. The shortage of maintenance Military Technicians and the persistent shortage of repair parts for older equipment add to the units' burden to maintain older systems. See Table 2 for the average age of equipment.

(c) Compatibility of Current Equipment with AC: The primary concern with the ARNG in regards to compatibility is its ability to mobilize units to perform missions for either Homeland Defense or OCONUS operations. A majority of the ARNG's equipment is one to two generations behind the AC. While compatibility of equipment isn't always the issue, commonality and supportability are prime concerns. While considered deployable, items such as CUCV, 800 series 5-Ton trucks, VRC-12 series radios, night vision devices older than the PVS-5 and the Dragon Anti-tank guided missile launch system are difficult to obtain repair parts for and are not desired by the AC or not permitted by Combatant Commands.



ARNG Military Police From Rhode Island Conduct a Raid In Baghdad

(d) Maintenance Issues: During mobilizations for OIF the accelerated timelines also included maintenance readiness challenges that were at times complicated by the mobilization of key State maintenance technicians, and repair parts problems. In most cases this was accomplished with the normal limited peacetime OPTEMPO funding pending the release of operational funds. The majority of ARNG equipment, primarily the combat tracked systems and trucks, will have a service life in the ARNG of 20-25 years before it is replaced through modernization. The equipment cascaded to the ARNG normally arrives at or near the end of its expected service life and in some cases will require extensive maintenance to maintain it as serviceable.

ARNG funding for the category known as “other equipment” increases from \$86.7M in FY 2005 to \$107M in FY 2009. This funding supports depot maintenance, calibration, construction, engineering equipment, weapons/armament, watercraft, and maintenance of Tactical Wheeled Vehicles (TWV). Currently, the ARNG depot maintenance program is funded at 75 percent of its total requirement for FY 2005. Funding for the total program increases steadily to 90 percent of total requirements in FY 2008.

ARNG depot maintenance for aircraft is funded at 90 percent of requirements in FY 2007 and increases to 94 percent in FY 2009. ARNG depot funding for communications-electronics equipment remains at 80 percent through FY 2005-09. Depot funding for combat vehicles ranges from a low of 72 percent of total requirements in FY 2005 to a high of 82 percent in FY 2008. Depot funding for missile systems increases from 78 percent in FY 2005 to 83 percent in FY 2007.

ARNG readiness is heavily dependent on depot maintenance funding to maintain minimum readiness rates and keep equipment operating that has reached or exceeded its service life. A continued trend of under funding maintenance programs, combined with a delay in providing new modernized equipment replacements, will continue the decline in readiness rates. Additionally, this continues to expand the technology gap between the ARNG and the AC equipment.

(e) Modernization Programs and Shortfalls: The ARNG’s top ten modernization shortages are shown in Table 8. Listed below are some of these and other systems not previously mentioned that are priorities for the ARNG to fill shortages and modernize capability.

(1) Javelin Anti-Tank Missile System: The Javelin is the Army’s first man-portable, fire and forget anti-tank missile system. Javelin's unique top-attack flight mode, superior self-guiding tracking system and advanced warhead design allows it to defeat all known tanks out to ranges of 2500m.



JAVELIN ANTI-ARMOR  
MISSILE

The Javelin system weighs 49 pounds, and its key technical feature is the use of fire-and-



The Obsolete Dragon Wire Guided  
Anti-Armor Missile Is Being  
Replaced By The Javelin Missile

forget technology that allows the gunner to fire and immediately take cover. Additional special features are the top-attack and direct-fire modes (for targets under cover), advanced tandem warhead, imaging infrared seeker, and target lock-on before launch and soft launch. Soft launch allows the Javelin to be fired safely from enclosures and covered fighting positions, increasing gunner survivability.

The fielding to the ARNG will begin in FY 2004 and is currently funded through FY 2011. Fielding for two ARNG additional divisions, a light separate brigade and a scout group are still to be determined. The Javelin fielding to the ARNG will replace the now obsolete 30-year-old Dragon Anti-tank missile system and is a key weapon in both the current and future forces. Infantry and Reconnaissance, Surveillance Target Acquisition (RSTA) units of the Stryker brigade combat teams depend on Javelin as their principal tank killer.

The ARNG desires an acceleration that would eliminate the 30-year-old Dragon sooner and replace it with Javelin in all ARNG units prior to FY 2010 and especially to units scheduled to deploy to Iraq and Afghanistan.

(2) TOW Improved Target Acquisition System (ITAS) M41: ITAS is a materiel change to the current ground TOW 2 weapon system for first-to-deploy light forces. ITAS will increase target acquisition ranges and be able to fire all configurations of TOW missiles while allowing room for growth for follow-on missiles. TOW ITAS is being fielded at battalion level, replacing TOW 2 in light infantry units. The ITAS modification kit consists of an integrated (day/night sight with laser range finder) target acquisition subsystem, fire-control subsystem, battery power source and modified traversing unit. TOW ITAS will operate from the HMMWV and the dismounted tripod platform. The Army is in the process of completing fielding to its light forces and will field ITAS to the ARNG's Stryker Brigade (until the Stryker Anti-Tank Guided Missile (ATGM) system is fielded) and potentially to a limited number of ARNG activating Light Anti-tank Companies. The ITAS procurement for the remainder of ARNG units was left unfunded and the Army announced it was terminating ITAS procurement. The remainder of all other ARNG light eSBs, light separate brigades and its light division will continue to use the TOW 2 Anti-Tank system. The ARNG has requested that ITAS be fielded to brigades scheduled to deploy to Iraq and Afghanistan to give them the same capability as their AC counterparts.



**TOW 2 Anti-Tank Missile System Being Fired From a HMMWV. After ITAS Fielding completes in FY 07, ARNG Units Will be the only Army Units Still Using TOW 2.**

(3) Line of Sight Antitank (LOSAT) Weapon System: This HMMWV based kinetic energy missile system uses a second generation forward looking infrared/video acquisition sensor to acquire targets and then launch a fire and forget kinetic energy missile. This air-mobile, lightweight system provides over-match capability at the maximum range of direct-fire engagements. The ARNG is scheduled to field LOSAT to a light anti-tank battalion after FY 07.

(4) High-Mobility Artillery Rocket System (HIMARS): HIMARS is a highly mobile artillery rocket system offering the Multiple Launch Rocket System (MLRS) type fire



**HIMARS**

power from a single six pack of rockets on one Army Tactical Missile System (ATACMS). The HIMARS system is a highly mobile, C130 or larger aircraft transportable FMTV 5-Ton mounted wheeled system. It carries a three-man crew and has a self-loading capability. HIMARS is scheduled to replace some of the MLRS M270 tracked systems and M198 towed 155mm howitzers in the ARNG. The ARNG desires additional HIMARS systems to replace all M198s towed 155mm howitzer battalions not being replaced by the M777 lightweight 155mm howitzer and M270s not being upgraded to the M270A1.

(5) Stryker: The eight-wheeled Stryker family of vehicles is the Army's first new armored vehicle to be fielded in 18 years. The primary design has two variants: the Infantry Carrier Vehicle (ICV) and Mobile Gun System (MGS). The ICV carries nine infantry soldiers and a crew of two. There are eight other variants of the basic ICV, which include a commander's vehicle, a fire-support vehicle, a mortar carrier, an ATGM vehicle, a medical evacuation vehicle and a nuclear, biological and chemical reconnaissance vehicle. The MGS is based on the ICV but has a 105mm turreted gun with an autoloader and a crew of three.



**STRYKER ANTI-TANK GUIDED MISSILE CARRIER**

The vehicles are being fielded to six different Stryker Brigade Combat Teams (SBCT) between now and FY 2010. SBCT number six will be the 56th Infantry Brigade, of the 28<sup>th</sup> Infantry Division (Mechanized) from the Pennsylvania ARNG which is converting from a M113 based infantry brigade. The 56<sup>th</sup> SBCT will first require base modernization of its equipment, and then will undergo the Army Unit Set Fielding that will equip the brigade with Stryker vehicles, digital command and control suites, and other state of the art systems by FY 2008.



**STRYKER FIRE SUPPORT VEHICLE**

(6) Sentinel Radar: This new radar is currently being fielded to the ARNG Echelons above Division Avenger Air Defense Battalions. This radar provides an organic warning and alerting device against all airborne targets and is a critical component for digitized air defense battalions. Projected fielding shortages remain for the ARNG Armored Cavalry Regiment air-defense battery and divisional air defense battalions for a shortfall of 50 systems. This radar provides an organic warning and alerting device



**SENTINEL RADAR, For Short Range Air Defense Units**

to the Short Range Air Defense units and is critical in automating the FAADC2I system. Projected shortages impact the capability of avenger units for Homeland Defense and OCONUS contingencies.

(7) Deployable Universal Combat Earthmover (DEUCE): Nicknamed the DEUCE,



DEUCE

this light bulldozer is a brand-new, state-of-the-art system that is being fielded to the engineer battalion in the ARNG separate light infantry brigades and also to the Stryker Brigades. Replacing the D7 Dozer, the DEUCE enables light infantry and airborne engineers to prepare airstrips, roads and protective positions. Transportable by C130 cargo aircraft, or air-droppable, the DEUCE integrates commercially available component parts making it easily supportable from various sources. It also eliminates the need to haul equipment from one site to another, is mobile enough to keep pace with light forces, and

can be road marched at 30 MPH. Fifty of the DEUCE systems will be fielded to the ARNG engineer battalions in the light separate brigades (to include the ARNG SBCT) during FY 2004.

(8) Military Gator (M-Gator): The ARNG received Congressional funding in FY 2003 to procure 144 of the John Deere M-Gator's for the 29<sup>th</sup> Infantry Division (Light). The M-Gator is a commercial off-the-shelf, small tactical/utility diesel powered 4x6 vehicle that is not under procurement by the Army and is procured and sustained through operational funds. The M-Gator is used extensively by light forces in the Army's 18<sup>th</sup> Airborne Corps and in elite Special Operations units. The system provides a highly mobile, air drop and helicopter sling certified platform. With a payload weight of 1400 lbs. the M-Gator provides an immediate and affordable capability to light units with limited organic vehicles and provides a tactical system capable of maneuvering in terrain not accessible to vehicles as large as the HMMWV. The ARNG would benefit through the continued support to field these vehicles in its existing light combat infrastructure.



M-GATOR, Being Used For Medical Evacuation In Afghanistan

(9) Movement Tracking System (MTS): MTS is a critical Logistics enabler that provides visibility for the Joint Logistics Corporate Enterprise and enables Distribution Based Logistics. The Army has or is currently fielding MTS to its most modernized digitized units and support units. MTS provides asset visibility and situational awareness that assists CS and CSS commanders and their staffs in planning and



executing CS/CSS operations. The ARNG needs additional systems to field to its units that are mobilizing for operations within Army organizations that use MTS to insure units have the same capability.

(10) TUAV - Shadow 200: TUAVs are invaluable for use by commanders in environments where real-time information feedback is needed, but manned aircraft are unavailable, or conditions make use of manned aircraft imprudent. The Shadow 200 is the TUAV being fielded to brigade combat teams, Stryker brigades, and Armored Cavalry Regiments. The system comes with three air vehicles, launch and recovery equipment and ground control stations and data terminals. The first unit to be fielded in the ARNG is the 56<sup>th</sup> Stryker Brigade in the FY 2007 time frame. The training requirement to operate these systems is 6 months. The ARNG is using FY 2004 NGREA funds to purchase a Shadow 200 system for ARNG to use as a training set and a request has been submitted to field this system early to ARNG brigades slated for deployment to Iraq.

(11) AN/PAS-13 Thermal Weapon Sight (TWS) Night Sight: The AN/PAS-13 TWS is an advanced infrared weapon sight now being fielded to the Army as a modern replacement weapon sight. It comes in a light model which can be used as a weapon sight or hand held imager, a medium model for use on medium sized machine guns and the heavy model for use on .50 cal machine guns. This sight is a state of the art night sight that requires no visible light to operate and its use cannot be detected since it emits no heat or radio frequency energy. This new sight is considered to be a critical requirement for operations in Iraq and Afghanistan and the ARNG is requesting early fielding to its combat brigades scheduled for deployment to those areas.

(f) Overall Equipment Readiness: The average EOH for a majority of the ARNG's units has dropped as a result of extensive requirements to cross-level equipment to fill shortages for mobilizing ARNG units. For some units, their equipment that was donated through cross-leveling to fill mobilization shortages was back-filled with older, less reliable equipment or equipment not considered deployable by the Army. In other cases there was none available to backfill the shortages. The ARNG is concerned about the de-mobilization plan for repairing equipment for its returning units and how to back-fill the equipment that doesn't return. The ARNG continues to be heavily dependent on full-time military technicians and depot funding to support readiness in its current force fleet.

(g) Other Equipment Specific Issues: Because of Homeland Security requirements and deployments abroad, ARNG soldiers face greater challenges than ever before. Training time and other resources such as ammunition, ranges, and qualified trainers are being used to support mobilizations and deployments. As a result, the availability of Training Aids, Devices, Simulators, and Simulations (TADSS) are at its most critical stage. TADSS devices such as Armor Full Crew Interactive Simulator, Bradley Fire Support Team, and Engagement Skills Trainer 2000 provide a training baseline for Inactive Duty Training (IDT) at home station and do not require the resource-intensive activities of firing live rounds, traveling to and from training areas, and competing for ranges. Using these technologies, soldiers can conduct preliminary gunnery and maneuver training so they maximize live training events during Annual Training. Training of the ARNG is different from the AC due to geographic dispersion of units and

significant time constraints of our soldiers. These differences necessitate unique TADSS solutions to meet the training requirements of the ARNG.

b) Changes Since Last NGRER: The Army decision to delay and redesign Phase III & IV of ADRS while initiating the AGRI will convert existing heavy and light combat structure into new designs that better support Combatant Commanders under the new defense strategy. This initiative will transform the heavy mechanized brigades and light brigades into a MLB that will be a HMMWV based unit. The restructuring would convert a typical brigade from three maneuver battalions to a brigade with two infantry battalions, a reconnaissance squadron or RSTA, and an engineer and support battalion.

These new organizations would be conceptionally apportioned for missions such as major conflict post hostility support, Homeland Security, Small Scale Contingencies (Peacekeeping Operations, Post Conflict Stability, Humanitarian Assistance, and the GWOT). These HMMWV based light units (M1114 Up-Armored HMMWV and other models) will modernize the ARNG's



Light Infantry Training with the M240B Machine Gun

oldest light and heavy brigades and purges the ARNG inventory of obsolete truck and track vehicles. The Army plans on resourcing the first MLB in FY 2008-2009 with equipment fielding in FY 2010-2011.

The Army is also developing a design for a multi-functional division (MFD). The MFD will incorporate MLBs as well as

current force brigades. The number of ARNG brigades and divisions converting to MLBs and MFDs is expected to be announced in late FY 2004 or 2005.



Light infantry armed with an M4 Carbine

Additionally, the Army has announced the decision to include two ARNG eSBs (one heavy and one light) into the FY 2004 replacement force plan for Operation Iraqi Freedom.

While the two brigades selected are two of the more modernized brigades they will still require shortages to be filled in items such as night vision goggles and replacement of obsolete trucks that are not being supported by the Army forces in Iraq.

c) Future Years Program (FY 2005 - FY 2007): The ADRS Phase I & II conversion of existing combat brigades into support units will finish by FY 2007. The Army has experienced some delays in procurement of the equipment to field the units (primarily in trucks) but the conclusion of the program will add several modernized support units to the available forces in the ARNG. The ARNG's Stryker brigade (56 Bde, 28<sup>th</sup> Div, Pennsylvania ARNG) will be well underway in its training for its new missions and will have begun the fielding of some of the brigades new equipment.

1) FY 2007 Equipment Requirements: The last year of ADRS Phase II equipment procurement will occur in FY 2007 and is expected to be predominately for chemical equipment, FMTVs and HMMWVs. The diversion of vehicles for continued operations in Iraq is expected to delay fielding to ADRS units. The 56<sup>th</sup> SBCT is expected to receive a majority of its unit set fielded Stryker systems in FY 2007 and into FY 2008. As of FY 2007 the ARNG will still have a large requirement for FMTVs, Night Vision Devices, HMMWVs and other tactical vehicles.

2) Anticipated New Equipment Procurements: See systems descriptions in the narrative.

3) Anticipated Transfers from AC to ARNG: There are currently no detailed projections for equipment expected to be transferred to the ARNG for FY 2005. The anticipated cascades are expected to fill shortfalls, but largely do little to modernize the ARNG. Unless it's a funded fielding program, not all equipment is made available to the ARNG in 10/20 transfer condition and may require some repair or refurbishment before it can be issued to ARNG units. Another problem is that high technology equipment such as radars and ground surveillance sensors will need extensive overhaul and or product improvement to be considered serviceable. Based on projected Army fielding and/or programmed force structure changes, the ARNG anticipates cascade of equipment to the ARNG for the following systems:



M923 5-TON CARGO

- Combat Tracked Vehicles - M1A1 Main Battle Tanks, M2A2 Bradley Fighting Vehicles.
- Tactical Wheeled Vehicles - M900 series 5 Ton truck variants, HEMMT basic model variants, M35A2 trucks, Heavy trucks such as Heavy Equipment Transport (HET), M900 series line haul tractors and trailers, engineer equipment.
- Communications & Electronic Equipment – PVS-5 Night Vision Devices, early model SINCGARS Radios.
- Power Generation - Diesel small, medium and large generators.

4) Anticipated Withdrawals from ARNG Inventory: The ARNG anticipates the ability to purge some of the following equipment from its inventory in FY 2005 due to anticipated cascades and fielding of new equipment: 800 series 5-Ton Trucks, M35 Series 2 ½ Ton Trucks, CUCVs, M109A5 Howitzers, M113 Variants, M1IP Tanks, OH-58 aircraft, UH-1 Utility Helicopter, VRC-12 Radios, Dragon Anti-Tank Missile Guidance Systems, M16A1 Rifles, M60 Machine Guns

5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2007: The ARNG anticipates continuing to have shortages for some of its inventory in the items listed below. The exact shortages cannot be projected because of the potential changes in the fielding of new equipment, *no formal Army cascade plan*, the unknown potential benefits of Congressional adds and NGREA procurement and the potential for equipment withdrawals from the ARNG for use by the AC. Anticipated shortages are addressed throughout the narrative.

- Combat Vehicles: M113A3 variants, M2A2 ODS Bradley Fighting Vehicles
- Tactical Wheeled Vehicles: FMTVs, HMMWV variants, Up-Armored HMMWVs

- Communications and Electronic Equipment: Night Vision Devices, SINCGARS, Precision Lightweight GPS Receiver, and Enhanced Position Location Reporting System
- Power Generation: Small, medium and large diesel fueled tactical quiet generators.
- Missile Systems: Javelin & ITAS Anti-Tank Missile System, Sentinel Radar
- Aviation: AH-64D Longbow Apache Helicopters, UH-60M Blackhawk

These shortages are expected to continue to provide mobilization changes in filling short falls and modernizing mobilizing units. Additionally these shortages will continue to negatively impact training because of limited availability and impact readiness because of the requirement to retain older, more difficult to maintain substitute equipment.

d) Summary/Conclusions: The ARNG anticipates an extremely high OPTEMPO period involving a high number of mobilized units, projected mobilizations and the uncertainty of future operations. The ARNG is already preparing to mobilize additional eSBs, other brigades and support units for operations in Iraq, Afghanistan, the Balkans and the Sinai. The shortages of key items of equipment continue to challenge the ARNG to cross-level in order to meet mobilization requirements. The shortages degrade the training and EOH of the donor units.



**STRYKER ARMORED VEHICLE**

The ARNG leadership is also highly concerned about soldier protection and is placing a great deal of emphasis on acquiring more body armor for individual soldiers and armor protection for vehicles, such as the Up-Armored HMMWV (M1114) and other initiatives. The ARNG will use its NGREA allotment and operational funding to address these concerns as well, while attempting to modernize its units scheduled for mobilization to the same capability as the AC.

Army transformational initiatives such as ADRS, the Stryker Brigade conversion of the ARNG's 56th Infantry Brigade, and the new AGRI initiative are critical programs to ARNG transformation to the Future Force and the modernization of its infrastructure.

Also equally important is the continued readiness support to the current force through depot maintenance funding, and full time technicians to ensure high readiness of the force not expected to modernize over the next 15-25 years. The ARNG will also continue to rely heavily on Congressional adds and NGREA to continue modernization and fill shortages for units not funded by Army Transformation.

## Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
<b>AIRCRAFT</b>							
HELICOPTER,OBSERVATION,OH-58D (KIOWA)	A21633	4,075,800	10	10	10	10	24
AIRPLANE, CARGO, TRANSPORT, C-12D	A29812	1,967,301	8	8	8	8	1
AIRPLANE, CARGO, C-23	A29880	7,424,158	38	38	38	38	46
AIRPLANE, CARGO, C-12	A30062	3,068,422	32	32	32	32	45
AIRPLANE CARGO, TRANSPORT, C-26	A46758	800,000	7	7	7	7	11
UH-60A EXTERNAL STORES SUBS	E21985	676,111	75	84	84	84	502
HELICOPTER,ATTACK AH-64 (APACHE)	H28647	10,680,000	273	302	302	302	233
HELICOPTER,CARGO CH-47D (CHINOOK)	H30517	1,820,458	124	124	124	124	152
HELICOPTER,OBSERVATION OH-58C (KIOWA)	H31110	190,817	90	90	90	90	0
HELICOPTER,MEDICAL UH-1V (IROQUOIS)	H31872	948,158	162	162	162	162	60
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	4,855,000	208	208	208	210	253
HELICOPTER,OBSERVATION OH-58A (KIOWA)	K31042	92,290	174	174	174	174	127
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	922,704	211	211	211	211	27
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	4,635,000	475	481	571	571	472
<b>MISSILES</b>							
FIRE UNIT VEHICLE MOUNTED,AVENGER	F57713	1,059,018	267	267	267	267	324
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	1,973,897	321	334	334	334	306
DRAGON TRACKER, ANTI-TANK GM	W80715	8,330	2,337	2,337	2,337	2,337	1,146
LAUNCHER, TOW II ATGM M220A1	L45740	133,000	1,326	1,326	1,326	1,326	996
JAVELIN ANTI-TANK MISSILE	H06201	115,000	364	1,045	1,219	1,348	2,215
<b>COMMUNICATIONS EQUIPMENT</b>							
RADIO SET AN/ARC-114	Q25990	20,857	295	295	295	295	142
RADIO SET AN/VRC-92A (SINGARS)	R45407	21,238	2,896	2,903	2,903	2,904	5,919
RADIO SET AN/VRC-87A (SINGARS)	R67160	12,109	1,899	1,899	1,899	1,899	1,351
RADIO SET AN/VRC-88A (SINGARS)	R67194	12,519	2,990	2,990	2,990	2,990	2,683
RADIO SET AN/VRC-89A	R44863	22,822	2,895	2,895	2,895	2,895	3,195
RADIO SET AN/VRC-90A (SINGARS)	R67908	13,178	9,997	9,997	9,997	9,997	8,647
RADIO SET AN/VRC-91A (SINGARS)	R68010	23,249	4,065	4,065	4,065	4,065	4,447
RADIO SET AN/PRC-112	R82903	5,020	1,043	1,044	1,044	1,044	5,016
RADIO SET AN/VRC-119A (SINGARS)	R83005	10,117	4,193	4,322	4,322	4,322	6,716

## Consolidated Major Item Inventory and Requirements

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
GUN LAYING POSITIONING SYSTEM	G97730	96,400	322	322	322	322	327
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>							
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	8,432	12,121	12,121	12,121	12,121	11,842
ALARM CHEM DET M22	A33020	10,000	684	1,034	1,034	1,034	6,960
MASK,CHEMICAL BIOLOGICAL M40	M12418	202	322,775	322,775	322,775	322,780	325,962
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	640	52,585	52,585	52,585	52,585	42,318
<b>CONSTRUCTION EQUIPMENT</b>							
BRIDGE ARMORED VEHICLE,SCISSOR TYPE	C20414	87,742	240	268	268	271	291
COMPACTOR,HIGH SPEED	E61618	135,186	117	117	117	117	124
CRANE,WHEEL MOUNTED,20T	F39378	162,393	1	1	1	1	39
CRANE-SHOVEL,CRAWLER MOUNTED	F40474	270,000	3	3	3	3	21
ATEC CRANE	F43429	160,953	94	94	94	94	36
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	129,684	2	2	2	2	22
INTERIOR BAY BRIDGE,FLOATING	K97376	62,910	247	337	337	337	274
ASPHALT PLANT	M57048	1,254,600	2	2	2	2	6
VIBRATOR ROLLER	S12916	45,183	146	146	146	146	142
TRACTOR WHLD EXCAVATOR	T34437	69,583	722	722	722	722	758
TRACTOR FT HIGH SPEED M9	W76473	887,050	40	40	40	40	31
TRACTOR,FULL TRACKED,LOW SPEED	W76816	205,000	706	706	706	706	518
TRACTOR,FT,LS,DED,MED	W83529	245,275	351	355	355	355	626
<b>ELECTRICAL GENERATION</b>							
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116 PU	G40744	12,102	1,044	1,044	1,044	1,044	118
GENERATOR SET,DSL ENG, SKID MTD,3KW, 60HZ, AC, 120/208	G54041	6,459	2,467	2,510	2,510	2,510	2,591
GENERATOR SET,DIESEL ENGINE,30KW	J36383	20,810	505	505	505	505	175
<b>OTHER PROCUREMENT</b>							
AVIATION NIGHT VISION GOGGLE, AN/AVS-6	A06352	10,747	5,405	5,405	5,405	5,405	4,429
METEOROLOGICAL MEASURING SET/TMQ-41	M35941	640,273	35	35	36	36	49
MELIOS PVS-6 EYE SAFE LASER OBSERVATION	M74849	22,015	1,152	1,384	1,434	1,511	7,605
MONOCULAR, NIGHT VISION, PVS-14	M79678	3,607	20,421	21,697	21,697	21,697	13,669
NIGHT VISION GOGGLES AN/PVS-5	N04456	4,300	34,762	35,146	35,146	35,146	3,422
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	3,500	4,480	4,817	5,326	5,385	15,102
NIGHT VISION DEVICE, AN/PVS-4 WMG	N04732	8,535	25,481	26,211	26,327	26,665	21,046
NIGHT SIGHT, TOW II ANTI-TANK SYSTEM AN/VAS UAS-12	N04982	61,791	1,330	1,330	1,330	1,330	922
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	69,641	10	10	10	10	248
NIGHT VISION GOGGLES AN/PVS-7B	N05482	3,578	63,737	75,335	83,874	91,258	183,809

**Consolidated Major Item Inventory and Requirements**

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
NAVIGATION SYSTEM, PSN-11	N95862	1,005	23,666	24,677	28,037	28,037	44,857
POSITION AZIMUTH DETECTION SYSTEM	P21220	299,115	224	224	226	226	224
EPLRS (ENHANCED POSITION LOCATION RADIO SYS)	P49587	50,814	450	1,366	1,487	1,491	1,359
RADAR SET AN/TPQ-36(V)	R14148	3,760,576	20	20	20	20	5
ROPU WATER PURIFICATION 3000 GPH	W47225	748,000	87	87	87	87	167
<b>TACTICAL VEHICLES</b>							
TACTICAL FIRE TRUCK	H56391	151,000	81	83	92	121	120
SEMITRAILER,22-1/2 TON M871	S70027	26,500	2,907	3,047	3,073	3,142	5,124
SEMITRAILER,FB,TRANSPORTR,34T	S70159	20,004	3,842	3,870	3,872	3,905	4,327
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	22,947	886	896	905	908	1,143
SEMITRAILER,HVY EQUIP TRANSPORTER,60T (HET)	S70661	70,564	206	206	206	206	256
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	229,219	810	810	810	879	913
SEMITRAILER 5000 GAL POL	S73372	97,413	502	502	508	562	770
TRUCK, UTILITY TOW HMMWV M966	T05096	49,521	1,159	1,167	1,167	1,171	900
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	61,665	2,035	3,010	3,538	4,060	3,858
TRUCK, AMBULANCE HMMWV M997	T38844	113,998	1,394	1,394	1,394	1,394	1,150
TRUCK,CARGO,TACTICAL,W/W-LT CR (HEMTT)	T39518	260,574	272	272	272	272	291
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	272,033	842	842	842	842	926
TRUCK,CARGO,TACTICAL, W/W&Wo/W M985 (HEMTT)	T39654	282,002	167	167	167	167	126
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	276,410	451	471	471	471	678
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (PLS)	T41067	288,015	743	743	743	743	607
TRUCK, CARGO, MTV W/W M1083	T41135	134,047	51	62	66	76	200
TRUCK CARGO MTV M1084 W/MHE	T41203	180,357	74	76	80	125	213
TRAILER HEMAT M989A1 (MLRS)	T45465	34,714	754	781	784	792	1,184
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	278,409	674	709	721	725	511
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	256,704	809	809	809	842	939
TRUCK,CARGO,10TON,W/LT CRANE (HEMTT)	T59278	251,388	764	764	764	764	621
TRUCK,CARGO,4X4,LMTV M1078	T60081	176,428	651	721	793	992	3,019
TRUCK, TRACTOR M915	T61103	162,968	1,981	1,981	2,025	2,099	2,383
TRK 5 TON TRACTOR, FMTV M1088	T61239	142,132	505	505	525	555	1,607
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	36,076	18,403	18,403	18,403	18,403	27,665
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	36,672	1,417	1,417	1,457	1,457	1,791
TRUCK, UTILITY, 1-1/4 TON, M1113	T61630	61,042	290	422	434	434	1,170

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Table 1

**Consolidated Major Item Inventory and Requirements**

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
TRUCK CARGO MTV LWB M1085	T61704	118,791	11	11	11	11	62
TRUCK,CARGO,MTV W/E M1083	T61908	128,076	333	384	412	496	1,798
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	379,000	738	762	764	787	1,058
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	100,199	133	223	393	516	517
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243	268,440	921	925	925	929	1,580
TRUCK,TRACTOR,LET M916	T91656	164,760	861	928	951	987	1,371
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	74,969	3,446	3,446	3,446	3,446	1,597
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	39,518	1,252	1,252	1,252	1,252	882
TRUCK, UP-ARMORED HMMWV, M1114	T92446	146,844	107	219	279	320	2,696
TRUCK CARGO LMTV M1079 W/E	T93484	162,060	41	46	46	46	154
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	46,731	694	718	747	747	1,031
TRUCK 5 TON WRECKER FMTV M1089	T94709	331,680	34	46	46	46	314
TRUCK, 2 1/2 TON M35A2	X40146	56,500	3,604	3,604	3,604	3,604	1,539
TRUCK,CARGO,5T,DROP SIDE WW	X40931	85,946	1,584	1,584	1,584	1,584	1,236
TRUCK,DUMP,5T,6X6,W/E M929	X43708	89,115	1,630	1,630	1,630	1,630	160
TRUCK,DUMP,5T 6X6 WW WE	X43845	93,130	537	537	537	537	1
TRUCK,DUMP,20T,12 CY M917	X44403	191,616	496	498	498	498	588
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>							
CARRIER,AMMO,TRACKED M992A2	C10908	1,140,667	321	321	328	328	325
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	627,881	446	446	446	446	301
ARMORED PERSONNEL M1059A2	C12815	298,778	100	100	100	100	98
ARMORED PERSONNEL CARRIER M113A3	C18234	405,815	1,575	1,575	1,575	1,575	2,798
CAVALRY FIGHTING VEHICLE,M3A0 (BRADLEY)	C76335	1,056,845	76	76	76	76	66
CARRIER,CARGO,FT,6 TON M548	D11049	323,416	715	715	715	715	447
CARRIER,COMMAND POST M577A1	D11538	345,787	1,842	1,842	1,842	1,842	1,416
ARMORED PERSONNEL CARRIER M113A1/2	D12087	244,844	3,070	3,070	3,070	3,070	117
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	1,349,348	754	754	754	754	770
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	1,144,000	264	264	348	348	339
HOWITZER,LIGHT,TOWED,105MM M119	H57505	1,100,000	47	47	47	47	43
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642	1,435,000	329	329	352	357	360
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	1,061,457	448	448	448	448	190
HOWITZER,M102,105MM,LT,TWD	K57392	126,016	263	263	263	263	537
HOWITZER,MEDIUM,SP,155MM M109A5	K57667	758,038	408	408	408	408	264
LAUNCH,M60 TANK CHASSIS	L43664	527,126	241	248	248	248	312
RECOVERY VEHICLE,FT,MDM M88A1	R50681	1,210,755	919	919	919	919	808
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	2,393,439	1,613	1,641	1,849	1,849	1,785

**ARNG**

Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
TANK,COMBAT,105MM M1 (ABRAMS)	T13374	1,645,697	658	658	658	658	257
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	887,050	40	40	40	40	31
<b>WEAPONS</b>							
MACHINE GUN,7.62MM 240B	M92841	6,000	7,908	8,867	8,971	9,430	9,430
RIFLE,5.56 MM M16A2	R95035	449	248,554	248,554	248,554	248,556	233,032

**ARNG**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

Nomenclature	Equip No.	Average Age	Remarks
<b>AIRCRAFT</b>			
HELICOPTER, ATTACK AH-64A (APACHE)	H28647	15	
HELICOPTER, CARGO CH-47D (CHINOOK)	H30517	14	
HELICOPTER, OBSERVATION, OH-58D (KIOWA)	A21633	14	
HELICOPTER, UTILITY UH-60A (BLACKHAWK)	K32293	21	
HELICOPTER, UTILITY UH-60L (BLACKHAWK)	H32361	8	
FIRE UNIT VEHICLE MOUNTED, AVENGER	F57713	11	
<b>MISSILES</b>			
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	16	
FIRE UNIT VEHICLE MOUNTED, AVENGER	F57713	11	
<b>COMMUNICATION EQUIPMENT</b>			
DATA PROCESS SYSTEM AN/MYQ-4	D78075	21	
DATA PROCESS SYSTEM AN/MYQ-4A	D78325	21	
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>			
DECONTAMINATION APPARATUS, SKID MOUNTED	F81880	30	
<b>CONSTRUCTION EQUIPMENT</b>			
BRIDGE ARMORED VEHICLE, SCISSOR TYPE	C20414	33	
CRANE, WHEEL MOUNTED, 20T	F39378	33	
CRANE-SHOVEL, CRAWLER MOUNTED	F40474	13	
GRADER, ROAD, MTR, FRONT WHEEL STEER	J74852	27	
SMALL EMPLACEMENT EXCAVATOR W/FRONT LOADER	T34437	15	
TRUCK, DUMP, 20T, 12 CY M917	X44403	26	
TRUCK, DUMP, 5T 6X6 WW WE	X43845	35	
ROLLER PNEUMATIC, VARIABLE PRESSURE	S11793	26	
TRACTOR, FULLTRACKED, ARMORED M9 (ACE)	W76473	10	
TRACTOR, FULLTRACKED, LOW SPEED	W76816	32	
TRACTOR, FULLTRACKED, LOW SPEED, DED, MED	W83529	24	
<b>ELECTRICAL GENERATION</b>			
ELECTRONIC SHOP AN/ASM-190LP	H01857	15	
GENERATOR SET, DIESEL ENGINE, 30KW	J36383	20	
GENERATOR SET, DSL ENG, TM, 10KW, 60HZ	G40744	14	
GENERATOR, PU-405	J35492	20	

**ARNG**  
**Average Age of Equipment**

Table 2

Nomenclature	Equip No.	Average Age	Remarks
ROLLER PNEUMATIC, VARIABLE PRESSURE	S11793	26	
<b>OTHER PROCUREMENT</b>			
KITCHEN, FIELD, TRAILER MOUNTED, M103A3 TR	L28351	18	
SHELTER SYSTEM, COLLECTIVE, 10 MAN	T00474	22	
SHOP EQUIPMENT, CONTACT	T10138	27	
SHOP SET, CONTACT MAINTENANCE	S30914	19	
SHOP SET, CONTACT MAINTENANCE	S30982	18	
<b>TACTICAL VEHICLES</b>			
ROUGH TERRAIN CARGO HANDLER, 50K LB (RTCH)	T48941	20	
TRACTOR, WHEELED, WAREHOUSE, 4K LB	W89557	24	
TRANSPORTER, PALLETIZED LOAD SYSTEM (PLS)	T40999	8	
TRUCK, CARGO, 10 TON, W/LT CRANE (HEMTT)	T59278	20	
TRUCK, CARGO, 5T, DROP SIDE WW	X40931	20	
TRUCK, CARGO, TACTICAL, W/W-LT CR (HEMTT)	T39518	16	
TRUCK, FORK LIFT, 6K LB, RT, VARIABLE REACH	T48944	11	
TRUCK, FORK LIFT, DD, 4K LB, RT	T49255	21	
TRUCK, M985, CARGO, W/MED CR (HEMTT)	T39586	13	
TRUCK, TANKER, FUEL, 2500G (HEMMT)	T87243	14	
TRUCK, TANKER, FUEL, 2500G WW (HEMTT)	T58161	14	
TRUCK, TRACTOR, HEAVY EQUIP TRANS SYS (HET)	T59048	10	
TRUCK, TRACTOR, LET M916	T91656	20	
TRUCK, TRACTOR, TACTICAL, 8X8, HVY EXPANDED	T88677	18	
TRUCK, UTILITY, 1-1/4 TON, M1036, TOW (HMMWV)	T92310	14	
TRUCK, UTILITY, 1-1/4 TON, M998, WE (HMMWV)	T61494	13	
TRUCK, WRECKER, M948E1, 8X8 (HEMMT)	T63093	13	
TRK UTILITY: HEAVY VARIANT HMMWV 4X4 10000	T07679	10	
SEMITRAILER TANK, PETROLEUM, 7500 GAL, BULK HAUL	S73119	12	
SEMITRAILER, 221/2 TON M871	S70027	20	
SEMITRAILER, FB, TRANSPORTER, 34T	S70159	20	
SEMITRAILER, HVY EQUIP TRANSPORTER, 60T (HET)	S70661	28	
SEMITRAILER, LOW BED, 40 TON, 6-WHEEL	S70594	25	
SEMITRAILER, VAN, SUP M129A2C	S75175	35	
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>			
ARMORED PERSONNEL CARRIER M113A3	C18234	15	

**ARNG**  
**Average Age of Equipment**

Table 2

Nomenclature	Equip No.	Average Age	Remarks
ARMORED PERSONNEL CARRIER, FISTV	C12155	36	
ARMORED PERSONNEL CARRIER, FM113A1/2	D12087	32	
CARRIER CARGO, FT, 6 TON M548	D11049	35	
CARRIER, AMMO, TRACKED M992A2	C10908	17	
CARRIER, COMMAND POST M577A1	D11538	16	
CARRIER, M106A1, 107MM MORT, 4.2IN	D10741	37	
CARRIER, SMOKE GENERATOR, FT, ARMD	C12815	31	
CAVALRY FIGHTING VEHICLE M3A0(BRADLEY)	C76335	19	
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	15	
HOWITZER, M102, 105MM, LT, TWD	K57392	15	
HOWITZER, MEDIUM, SP, 155MM M109A5	K57667	32	
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	19	
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	12	
LAUNCH, M60 TANK CHASSIS	L43664	27	
RECOVERY VEHICLE, FT, MDM M88A1	R50681	28	
SEMITRAILER TANK, PETROLEUM, 7500 GAL, BULK HAUL	S73119	12	
SEMITRAILER, 221/2 TON M871	S70027	20	
SEMITRAILER, FB, TRANSPORTER, 34T	S70159	20	
SEMITRAILER, HVY EQUIP TRANSPORTER, 60T (HET)	S70661	28	
SEMITRAILER, LOW BED, 40 TON, 6-WHEEL	S70594	25	
SEMITRAILER, VAN, SUP M129A2C	S75175	25	
TANK, COMBAT, 105 MM M1 (ABRAMS)	T13374	19	
TANK, COMBAT, 120MM M1A1 (ABRAMS)	T13168	16	
TRACTOR, FULLTRACKED, ARMORED M9 (ACE)	W76473	10	
TRACTOR, FULLTRACKED, LOW SPEED	W76816	32	
TRACTOR, FULLTRACKED, LOW SPEED, DED, MED	W83529	24	

## Service Procurement Program - Reserve (P-1R)

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All values are costs in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>MODIFICATION OF AIRCRAFT</b>				
CH-47 CARGO HELICOPTER MODS	85,000,000	54,400,000	105,400,000	
UTILITY/CARGO AIRPLANE MODS	10,093,000	13,575,000	3,417,000	
AIRCRAFT LONG RANGE MODS	754,000	779,000	787,000	
AIRBORNE AVIONICS		9,953,000	8,513,000	
GATM ROLLUP	28,033,000	6,591,000	2,812,000	
<b>SUPPORT EQUIPMENT AND FACILITIES</b>				
AIR TRAFFIC CONTROL	23,280,000	28,225,000	11,945,000	
<b>OTHER MISSILES</b>				
JAVELIN (AAWS-M) SYSTEM SUMMARY			4,597,000	
MLRS LAUNCHER SYSTEMS	26,749,000			
HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)		138,289,000		
<b>MODIFICATION OF MISSILES</b>				
MLRS MODS	1,310,000	3,655,000		
HIMARS MODIFICATIONS: (NON AAO)		1,444,000	4,576,000	
<b>SPARES AND REPAIR PARTS</b>				
SPARES AND REPAIR PARTS	1,305,000	1,470,000	5,757,000	
<b>TRACKED COMBAT VEHICLES</b>				
STRYKER		566,841,000	213,354,000	
<b>WEAPONS AND OTHER COMBAT VEHICLES</b>				
XM107, CAL. 50, SNIPER RIFLE	2,988,000	3,338,000		
5.56 CARBINE M4	6,177,000	241,000		
HOWITZER LT WT 155MM (T)		29,927,000		
MARK-19 MODIFICATIONS	199,000	291,000		
SQUAD AUTOMATIC WEAPON (MOD)	357,000	279,000		
<b>TACTICAL AND SUPPORT VEHICLES</b>				
SEMITRAILERS, FLATBED:	5,861,000	5,207,000	3,394,000	
SEMITRAILERS, TANKERS			8,435,000	
HI MOB MULTI-PURP WHLD VEH (HMMWV)	113,387,000	149,250,000	28,351,000	
FAMILY OF MEDIUM TACTICAL VEH (FMTV)	128,574,000	202,525,000	147,031,000	

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Table 3

**Service Procurement Program - Reserve (P-1R)**

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIPMEN		5,247,000	25,213,000	
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	30,380,000	29,679,000	53,086,000	
HVY EXPANDED MOBILE TACTICAL TRUCK EXT SERV P		10,157,000		
<b>COMMUNICATIONS AND ELECTRONICS EQUIPMENT</b>				
SAT TERM, EMUT (SPACE)	700,000	200,000		
NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE)	235,000	220,000		
SMART-T (SPACE)		810,000		
SINCGARS FAMILY		3,300,000		
ACUS MOD PROGRAM	6,038,000	4,731,000		
COMMS-ELEC EQUIP FIELDING	720,000	750,000	1,950,000	
MEDICAL COMM FOR CBT CASUALTY CARE (MC4)			991,000	
TSEC - ARMY KEY MGT SYS (AKMS)	135,000	157,000	166,000	
TUAV	15,017,000			
ITEMS LESS THAN \$5.0M (TIARA)	3,324,000			
LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM		1,367,000		
NIGHT VISION, THERMAL WPN SIGHT	1,370,000			
FORCE XXI BATTLE CMD BRIGADE & BELOW (FBCB2)	23,332,000			
INTEGRATED MET SYS SENSORS (IMETS) - TIARA		173,000		
TACTICAL OPERATIONS CENTERS	5,538,000	1,008,000	1,368,000	
ADV FA TAC DATA SYS / EFF CTRL SYS (AFATDS/EC		1,398,000		
FAAD C2	10,030,000	2,697,000	4,528,000	
JOINT NETWORK MANAGEMENT SYSTEM (JNMS)	1,092,000	455,000	856,000	
MANEUVER CONTROL SYSTEM (MCS)		599,000	1,100,000	
<b>OTHER SUPPORT EQUIPMENT</b>				
TACTICAL BRIDGING	9,937,000	22,931,000		
TACTICAL BRIDGE, FLOAT-RIBBON	16,396,000	280,000	783,000	
SOLDIER ENHANCEMENT			3,670,000	
LIGHTWEIGHT MAINTENANCE ENCLOSURE (LME)	10,000	20,000		
LAND WARRIOR			16,304,000	
FIELD FEEDING EQUIPMENT	3,435,000	1,344,000	409,000	
ITEMS LESS THAN \$5.0M (ENG SPT EQ)	58,000	49,000		
DISTRIBUTION SYSTEMS, PETROLEUM & WATER	8,134,000	13,533,000	11,011,000	
WATER PURIFICATION SYSTEMS	327,000	9,173,000	5,977,000	

**ARNG**

Table 3

**Service Procurement Program - Reserve (P-1R)**

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
COMBAT SUPPORT MEDICAL	197,000	2,218,000	1,373,000	
SHOP EQ CONTACT MAINTENANCE TRK MTD (MYP)	4,818,000	4,782,000	6,168,000	
WELDING SHOP, TRAILER MTD			2,454,000	
MISSION MODULES - ENGINEERING			7,635,000	
GENERATORS AND ASSOCIATED EQUIP	11,406,000	25,078,000	16,638,000	
INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE)			23,135,000	
MODIFICATION OF IN-SVC EQUIPMENT (OPA-3)	50,000	20,000		
<b>TOTAL</b>	<b>\$586,746,000</b>	<b>\$1,358,656,000</b>	<b>\$733,184,000</b>	

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
HEMTT TANKER, M978		2,900,000	2,709,900	
SINGGARS RADIOS/CASCADE TPF	17,890,000	7,300,000		
HEMTT WRECKERS		3,200,000		
PVS-7D/ PVS-14 NIGHT VISION GOGGLE	6,110,000	3,900,000	14,932,500	
BRADLEY MODS TO ODS	50,848,111			
RESERVE AUTOMATION SYSTEM	15,350,000			
HMMWV	17,350,000	2,870,000	15,050,000	
UH-60 BLACKHAWKS	57,850,000			
ENGAGEMENT SKILLS TRAINER	4,050,000		2,500,000	
HETS	2,340,000			
LASER MARKSMANSHIP TRAINER	8,350,000		1,920,000	
MULTI-ROLE BRIDGING COMPANY	15,350,000			
HEMTTS	17,550,000			
DISTANCE LEARNING	5,850,000			
FMTV M1083 5-TON CARGO		4,900,000	5,600,000	
METEOROLOGICAL MEASURING SYSTEM		1,460,000		
SINGGARS-AIRBORNE RADIOS		3,300,000	2,940,900	
A/B FIST			9,350,000	
DFIRST			2,502,000	
M4 CARBINE			5,000,000	
M240B MACHINE GUN			3,600,000	
PRC-112 RADIO			1,650,000	
PEQ-2 RIFLE ILLUMINATOR			4,302,700	
AFATDS			900,000	
SHADOW 200 TUAV			12,000,000	
MOVEMENTS TRACKING SYSTEM (MTS)			4,500,000	
AN/USD-60A SATELLITE TERMINAL			9,800,000	
<b>TOTAL</b>	<b>\$218,888,111</b>	<b>\$29,830,000</b>	<b>\$99,258,000</b>	

### 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 Active 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 2005 Qty	FY 2006 Qty	FY 2007 Qty	Remarks
AVIATION NIGHT VISION GOGGLE, AN/AVS-6	A06352	740			
AIRPLANE, CARGO, C-23	A29880	4			
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	2,644			
ALARM CHEM DET M22	A33020	417	350		
ARMORED PERSONNEL CARRIER M113A3	C18234	2			
BRIDGE ARMORED VEHICLE,SCISSOR TYPE	C20414		26		
UH-60A EXTERNAL STORES SUBS	E21985		9		
CRANE,WHEEL MOUNTED,20T	F39378	1			
A TEC CRANE	F43429	1			
FIRE UNIT VEHICLE MOUNTED,AVENGER	F57713	24			
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	34		84	
GENERATOR SET, DSL ENG, SKID MTD, 3KW, 60HZ, AC, 120/208	G54041	342	43		
GUN LAYING POSITIONING SYSTEM	G97730	71			
HELICOPTER,ATTACK AH-64 (APACHE)	H28647	54	11		
HELICOPTER,CARGO CH-47D (CHINOOK)	H30517	13			
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	61			
TACTICAL FIRE TRUCK	H56391	13	2		
GENERATOR SET,DIESEL ENGINE,30KW	J36383	30			
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	1			
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	1			
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	22	6	90	
HOWITZER,M102,105MM,LT,TWD	K57392	11			
INTERIOR BAY BRIDGE,FLOATING	K97376	1			
LAUNCH,M60 TANK CHASSIS	L43664	11	7		
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894		13		
MASK,CHEMICAL BIOLOGICAL M40	M12418	11,368			
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	48			
METEOROLOGICAL MEASURING SET/TMQ-41	M35941	6			
MELIOS PVS-6 EYE SAFE LASER OBSERVATION	M74849		232	50	
MONOCULAR, NIGHT VISION, PVS-14	M79678	3,410			

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Table 5

**Projected Equipment Transfer/Withdrawal Quantities**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Qty</b>	<b>FY 2006 Qty</b>	<b>FY 2007 Qty</b>	<b>Remarks</b>
MACHINE GUN,7.62MM 240B	M92841	5,403	830	104	
NIGHT VISION GOGGLES AN/PVS-5	N04456	1,136	384		
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	2,002	337	509	
NIGHT VISION DEVICE, AN/PVS-4 WMG	N04732	1,638	730	116	
NIGHT VISION GOGGLES AN/PVS-7B	N05482	19,485	11,598	8,539	
NAVIGATION SYSTEM, PSN-11	N95862	3,335	1,011	3,360	
POSITION AZIMUTH DETECTION SYSTEM	P21220	34			
RADIO SET AN/VRC-89A	R44863	4			
RADIO SET AN/VRC-92A (SINGARS)	R45407	10	7		
RECOVERY VEHICLE,FT,MDM M88A1	R50681	24			
RADIO SET AN/VRC-87A (SINGARS)	R67160	13			
RADIO SET AN/VRC-90A (SINGARS)	R67908	16			
RADIO SET AN/VRC-91A (SINGARS)	R68010	364			
RADIO SET AN/PRC-112	R82903	468	1		
RADIO SET AN/VRC-119A (SINGARS)	R83005	800	129		
RIFLE,5.56 MM M16A2	R95035	47			
SEMITRAILER,22-1/2 TON M871	S70027	482	140		
SEMITRAILER,FB,TRANSPORTR,34T	S70159	1,056	28	2	
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	1	4	9	
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	7			
SEMITRAILER 5000 GAL POL	S73372			6	
TRUCK, UTILITY TOW HMMWV M966	T05096		8		
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	295	713	380	
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	22	28	208	
TRUCK, CARGO, MTV W/W M1083	T41135		2		
TRUCK CARGO MTV M1084 W/MHE	T41203	69	2	4	
TRAILER HEMAT M989A1 (MLRS)	T45465	24	27	3	
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	119		5	
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	5			
TRUCK,CARGO,4X4,LMTV M1078	T60081	132	23		
TRUCK, TRACTOR M915	T61103	130		44	
TRK 5 TON TRACTOR, FMTV M1088	T61239	46			
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	2			
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562			27	
TRUCK, UTILITY, 1-1/4 TON, M1113	T61630			3	
TRUCK CARGO MTV LWB M1085	T61704	1			

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Table 5

**Projected Equipment Transfer/Withdrawal Quantities**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Qty</b>	<b>FY 2006 Qty</b>	<b>FY 2007 Qty</b>	<b>Remarks</b>
TRUCK,CARGO,MTV W/E M1083	T61908	21	37	5	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	108	24		
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243	101	4		
TRUCK,TRACTOR,LET M916	T91656	33	24		
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	299			
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	227			
TRUCK, UP-ARMORED HMMWV, M1114	T92446		112	1	
TRUCK CARGO LMTV M1079 W/E	T93484	20	5		
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	20		29	
TRUCK 5 TON WRECKER FMTV M1089	T94709	18	11		
ROPU WATER PURIFICATION 3000 GPH	W47225	7			
TRACTOR,FULL TRACKED,LOW SPEED	W76816	58			
TRACTOR,FT,LS,DED,MED	W83529	56	4		
TRUCK,CARGO,5T,DROP SIDE WW	X40931	2			
TRUCK,DUMP,20T,12 CY M917	X44403	19	2		

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	24	24				
AIMING LIGHT,INFRARED,AN/PAQ-4	A34938	555	555				
BATTERY CASE,Z-AIJ/TSEC	C62375	31	31				
DISPENSER,MINE XM139	D30897	6	6				
LAUNCHER,GRENADE,40MM,MARK 19-3	M92362	124	124				
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	69	69				
RADIACMETER IM-93/UD	Q20935	11	11				
RADIO SET AN/VRC-89A (SINCGARS)	R44863	131	131				
RADIO SET AN/VRC-88A (SINCGARS)	R67194	67	67				
RADIO SET AN/VRC-90A (SINCGARS)	R67908	184	184				
TANK ASSY, FABRIC, COLLAPSIBLE, WATER, 20000 GAL	T12938	2	2				
TARGET DESIGNATOR SET,ELEC OPT	T26457	6	6				
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	6	6				
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	1	1				
UH60 RADIO CONTROL HEADS							451,697
M871A3 SEMI-TRAILER				12,100,000		7,200,000	7,200,000
TRUCK, HEMTT WRECKER M984						6,102,000	6,102,000
AFIST (M1A1 CREW TRAINER)						5,160,000	8,424,000
NIGHT VISION GOGGLES AN/PVS-7	N05482	182	182			1,656,000	1,656,000
CH47 CRASHWORTHY FUEL CELLS						1,752,000	1,752,000
HEMTT TANKER, 2500 GAL						4,480,000	6,144,000
AIRCRAFT SIMULATOR TRAINER						5,000,000	
D7 DOZER MOD						1,600,000	1,600,000
UH-60 BLACKHAWK (MYP)				81,205,000	81,205,000		
AH1F MODS				423,000			
UTILITY/CARGO AIRPLANE MODS				820,000	6,100,000		
AVENGER SYSTEM SUMMARY				21,286,000			
JAVELIN (AAWS-M) SYSTEM SUMMARY (MYP)				86,114,000			
MLRS LAUNCHER SYSTEMS				14,874,000	17,154,000		

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
AVENGER MODS				2,040,000	2,040,000		
MLRS MODS				1,315,000			
SPARES AND REPAIR PARTS				1,464,000			
BRADLEY BASE SUSTAINMENT					70,771,000		
HOWITZER, MED SP FT 155MM M109A6 (MOD)				2,645,000	2,645,000		
ARMOR MACHINE GUN, 7.62MM M240 SERIES				12,449,000	12,335,000		
GRENADE LAUNCHER, AUTO, 40MM, MK19-3				7,191,000			
M16 RIFLE				3,828,000	1,422,000		
5.56 CARBINE M4				5,190,000	5,190,000		
M119 MODIFICATIONS				3,229,000			
SEMITRAILER FB BB/CONT TRANS 22 1/2 T				12,135,000			
SEMITRAILER, TANK, 5000G				30,213,000			
SEMITRAILER, TANK, 7500G, BULKHAUL				4,044,000			
HI MOB MULTI-PURP WHLD VEH (HMMWV)				5,324,000	5,857,000	10,500,000	10,463,000
FAMILY OF MEDIUM TACTICAL VEH (FMTV)				84,014,000	62,119,000	2,945,000	2,945,000
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)				121,825,000	116,930,000		
TRUCK, TRACTOR, LINE HAUL, M915/M916				39,549,000	38,059,000		
SINGGARS FAMILY					20,000,000	1,736,000	1,284,303
TSEC - ARMY KEY MGT SYS (AKMS)				700,000			
ALL SOURCE ANALYSIS SYS (ASAS) (TIARA)					3,141,000		
JOINT STARS (ARMY) (TIARA)				66,415,000			
DIGITAL TOPOGRAPHIC SPT SYS (DTSS) (TIARA)				4,482,000	4,482,000		
FAAD GBS				24,188,000	23,944,000		
ARTILLERY ACCURACY EQUIP				10,930,000	10,829,000		
MOD OF IN-SVC EQUIP (TAC SURV)				8,300,000	8,300,000		
ADV FIELD ARTILLERY TACT DATA SYS (AFATDS)				28,384,000			
FAAD C2				17,868,000	17,868,000		
LOGTECH				1,479,000	1,479,000		
GUN LAYING AND POS SYS (GLPS)				7,678,000	6,578,000		
ISYSCON EQUIPMENT				1,900,000	1,090,000		
STAMIS TACTICAL COMPUTERS (STACOMP)				15,560,000	15,441,000		
AUTOMATED DATA PROCESSING EQUIP				1,603,000	1,603,000		

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
RESERVE COMPONENT AUTOMATION SYS (RCAS)				56,973,000	58,741,000		
FAMILY OF TANK ASSEMBLIES, FABRIC, COLLAPSIBLE				2,489,000			
HYDRAULIC EXCAVATOR				2,145,000	2,550,000	1,519,000	1,519,000
DEPLOYABLE UNIVERSAL COMBAT EARTH MOVERS				2,095,000			
GENERATORS AND ASSOCIATED EQUIP				5,042,000	5,042,000		
ALL TERRAIN LIFTING ARMY SYSTEM				4,760,000	4,760,000		
TRAINING DEVICES, NONSYSTEM				45,176,000	45,176,000		
CLOSE COMBAT TACTICAL TRAINER				25,212,000	25,212,000		
FIRE SUPPORT COMBINED ARMS TACTICAL TRAINER				1,457,000	1,443,000		
CALIBRATION SETS EQUIPMENT				466,000	466,000		
TEST EQUIPMENT MODERNIZATION (TEMOD)				5,628,000	5,628,000		
INITIAL SPARES - C&E				2,312,000	1,985,000		
JAVELIN (AAWS-M) SYSTEM SUMMARY					7,934,000		
SEMITRAILERS, FLATBED:					4,496,000		
SEMITRAILERS, TANKERS					27,729,000		
ACUS MOD PROGRAM					64,900,000		
ARMY COMMON GROUND STATION (CGS)					34,000,000		
ADV FA TAC DATA SYS / EFF CTRL SYS (AFATDS/EC					28,384,000		
FAMILY OF TANK ASSEMBLIES, FABRIC, COLLAPSIBL					2,446,000		
<b>TOTAL</b>				<b>\$896,519,000</b>	<b>\$857,474,000</b>	<b>\$49,650,000</b>	<b>\$49,541,000</b>

## 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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
<b>AIRCRAFT</b>						
AIRPLANE,CARGO,C-12	A30062	AIRPLANE CARGO TRANSPORT:C-12C	A29744	1	X	
AIRPLANE,CARGO,C-12	A30062	AIRPLANE CARGO TRANSPORT:C-12D	A29812	2	X	
HELICOPTER,MEDICAL UH-1V (IROQUOIS)	H31872	HELICOPTER UTILITY: UH-1H	K31795	5		X
HELICOPTER,OBSERVATION OH-58A (KIOWA)	K31042	HELICOPTER OBSERVATION: OH-58C	H31110	4		X
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	HELICOPTER UTILITY: UH-1V	H31872	67		X
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	HELICOPTER UTILITY: UH-1 MODELS	VARIOUS	13	X	
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	HELICOPTER UTILITY: UH-60A	K32293	4	X	
<b>COMMUNICATIONS EQUIPMENT</b>						
RADIO SET (SINGARS) SYSTEM	VARIOUS	VARIOUS 12 SERIES SYSTEMS	VARIOUS	18,223		X
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>						
ALARM, CHEMICAL AGENT, AUTOMATIC, M8A1	A32355	POWER SUPPLY: CHEMICAL AGENT AUTOMATIC ALARM	VARIOUS	1,500	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418		NY0008	1	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK CBR: PROTECTIVE FIELD	M11895	69,587	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK CHEMICAL BIOLOGICAL:COMBAT VEHICLE M42	M18526	69	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK: PROTECTIVE TANK	M10936	47	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK CBR: PROTECTIVE FIELD	M11895	10	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK CHEMICAL BIOLOGICAL:M40	M12418	70	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK: PROTECTIVE TANK	M10936	3,797	X	
<b>CONSTRUCTION EQUIPMENT</b>						
COMPACTOR,HIGH SPEED	E61618	TAMPER VIBRATING TYPE: INTERNAL COMBUSTIONENGINE DRIVEN	V11001	1	X	
CRANE,WHEEL MOUNTED,20T	F39378		VARIOUS	10	X	
CRANE-SHOVEL,CRAWLER MOUNTED	F40474		VA2198	1	X	

## Major Item of Equipment Substitution List

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
CRUSH & SCREEN PLANT,75TPH	F49399	CRUSH SCREEN AND WASH PLANT:DSL/ELEC DRVNWHL MTD 150-225 TPH	VARIOUS	4	X	
GRADER,ROAD,MOTORIZED,10FT BLADE	J74910	GRADER ROAD MOTORIZED: DSL DRVN SECTIONALIZED	VARIOUS	9	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852		CO0301	1	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852		OK1910	1	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	GRADER ROAD MOTORIZED: DSL DRVN HVY (CCE)	G74783	20	X	
GRADER,ROAD,MOTORIZED,SECTIO NALIZED	J74886	GRADER ROAD MOTORIZED: DSL DRVN HVY (CCE)	G74783	3	X	
VIBRATOR ROLLER	S12916	COMPACTOR HIGH SPEED: TAMPING SELF-PROPELLED (CCE)	3EA LINS	4	X	
ATEC CRANE	F43429	CRANE-SHOVEL TRK MTD: 20TW/BOOM CRANE 30FT W/BLK TKLE 30 FT	VARIOUS	15	X	
TRACTOR,FT,LS,DED,MED	W83529	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF WINC	23EA LINS	334	X	
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF WINC	W76816	6	X	
TRACTOR,FULL TRACKED,LOW SPEED	W76816	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF RIPP	12EA LINS	27	X	
<b>ELECTRICAL GENERATION</b>						
GENERATOR SET,DIESEL ENGINE,30KW	J36383	POWER PLANT ELEC TM: 30KW60HZ 2EA PU-406W/DIST BOX AN/MJQ-10	VARIOUS	41	X	
GENERATOR SET,DSL ENG,SKID MTD,3KW,60HZ,AC,120/208	G54041	POWER PLANT: DIESEL TRL/MTD10KW60HZ AN/NJQ-37	VARIOUS	1,353	X	
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116 PU	G40744	POWER PLANT ELEC TM: 5KW60HZ 2EA MTD ON M103A3 AN/MJQ-16	VARIOUS	13	X	
<b>OTHER PROCUREMENT</b>						
MINI EYESAFE LASER INFRARED OBSERVATION SET (MELIOS)	M74849	LASER INFRARED OBSERVATION SET: AN/GVS-5	L40063	330	X	
NIGHT VISION GOGGLES AN/PVS-5	N04456	VARIOUS NIGHT SIGHTS	VARIOUS	181	X	
NIGHT VISION GOGGLES AN/PVS-7B	N05482	VARIOUS NIGHT VISION DEVICES	VARIOUS	17,501	X	
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT SIGHT EQUIPMENT: (TOW2)	N04982	19	X	
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT VISION SIGHT EQUIPSET: (TOW/GLLD NIGHT SIGHT)	A70349	2	X	

**Major Item of Equipment Substitution List**

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT VISION SIGHT TRIPODMOUNTED: AN/TVS-4	N15518	3	X	
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	VARIOUS NIGHT VISION DEVICES	VARIOUS	2,419	X	
RADAR SET AN/TPQ-36(V)	R14148	RADAR SET: AN/TPQ-36(V)7	R14216	3	X	
<b>TACTICAL VEHICLES</b>						
TRAILER HEMAT M989A1 (MLRS)	T45465	VARIOUS SUBSTITUTES	12EA LINS	39	X	
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (PLS)	T41067	VARIOUS SUBSTITUTES	13EA LINS	145	X	
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	TRUCK CARGO: HEAVY PLS TRANSPORTER 15-16.5TON 10X10 W/MHE W/E	T41067	81	X	
TRK 5 TON TRACTOR, FMTV M1088	T61239	VARIOUS TRACTORS - 5 TON	3EA LINS	517	X	
TRUCK 5 TON WRECKER FMTV M1089	T94709	TRUCK WRECKER: 5 TON 6X6W/WINCH W/E	X63299	12	X	
TRUCK 5 TON WRECKER FMTV M1089	T94709	TRUCK WRECKER: TACTICAL 8X8HEAVY EXPANDEDMOBILITY W/WINCH	T63093	1	X	
TRUCK CARGO LMTV M1079 W/E	T93484	TRUCK VAN: SHOP 2-1/2 TON6X6 W/E	X62340	2	X	
TRUCK CARGO MTV LWB M1085	T61704	TRUCK CARGO: 2-1/2 TON 6X6 XLWB W/E	X40283	39	X	
TRUCK CARGO MTV LWB M1085	T61704	TRUCK CARGO: 5 TON 6X6 XLWBW/E	X41105	1	X	
TRUCK CARGO MTV LWB M1085 W/W	T61772	TRUCK CARGO: 2-1/2 TON 6X6 XLWB W/WINCH W/E	X40420	10	X	
TRUCK CARGO MTV M1084 W/MHE	T41203	TRUCK CARGO: DROP SIDE 5TON6X6 W/E	X40794	12	X	
TRUCK CARGO MTV M1084 W/MHE	T41203	TRUCK CARGO: DROP SIDE 5TON6X6 W/WINCH W/E	X40931	24	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS CUCV VEHICLES	6EA LINS	225		X
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS HMMWV VEHICLES	6EA LINS	557	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS M35 VEHICLES	3EA LINS	19	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	HMMWV SUBS	4EA LINS	1,779	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	CUCV SUBS	6EA LINS	39		X
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	800 Series 5 Tons and M35A2	5EA LINS	65		X
TRUCK,CARGO,10TON,W/LT CRANE (HEMTT)	T59278	HEMTT AND 5 TON SUBS	11EA LINS	154	X	
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: 2-1/2 TON 6X6 W/E	X40009	210	X	
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: 2-1/2 TON 6X6 W/WINCH W/E	X40146	20	X	

**Major Item of Equipment Substitution List**

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: DROP SIDE 2-36162TON 6X6 W/E	X40077	12	X	
TRUCK,CARGO,5T,DROP SIDE WW	X40931	VARIOUS MODELS	12EA LINS	282	X	
TRUCK,CARGO,MTV W/E M1083	T61908	DROP SIDE 5TON6X6	5EA LINS	25	X	
TRUCK,CARGO,TACTICAL,WW-LT CR (HEMTT)	T39518	VARIOUS HEMTT AND 5 TONS	13EA LINS	118	X	
TRUCK,DUMP,20T,12 CY M917	X44403	TRUCK DUMP: 5 TON 6X6 W/WINCH W/E	X43845	1	X	
TRUCK,DUMP,5T 6X6 WW WE	X43845	TRUCK DUMP: 5 TON 6X6 W/E	X43708	7	X	
TRUCK,DUMP,5T,6X6,W/E M929	X43708	TRUCK DUMP: 5 TON 6X6 W/WINCH W/E	X43845	56	X	
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	TRUCK LIFT FORK: DED 6000LBVARIABLE REACH RT AMMO HDLG	T48944	2	X	
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	TRUCK LIFT FORK: DSL DRVN10000 LB CAP 48IN LD CTR ROUGH TERRA	T49119	4	X	
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	HEMTT AND 5 TON SUBS	11EA LINS	120	X	
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	VERSIONS W/PODS/5 TON TRKS	23EA LINS	462	X	
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	TRUCK TRACTOR: HET 8X6 850GVW W/DUAL MIDSHIP WINCH(CS) W/E	T61035	37	X	
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	TRUCK TRACTOR: LET 6X6 660GVW W/W C/S	T91656	2	X	
TRUCK,TRACTOR,LET M916	T91656	TRUCK TRACTOR: MET 8X6 750GVW W/W C/S	T61171	2	X	
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	VARIOUS CUCVS	2EA LINS	193		X
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	VARIOUS MODEL HMMWVS	5EA LINS	55	X	
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	VARIOUS MODELS CUCVS	5EA LINS	23	X	
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	VARIOUS MODELS HMMWVS	4EA LINS	389		X
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	CUCVS	6EA LINS	4,350		X
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	OTHER MODELS OF HMMWV	8EA LINS	1,244	X	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	TRUCK CARGO: TACTICAL 8X8HEAVY EXPANDED MOBILITY W/MED CRANE	T39586	1	X	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	TRUCK WRECKER: 5 TON 6X6W/WINCH W/E	X63299	222	X	
SEMITRAILER 5000 GAL POL	S73372	SEVERAL VARIANTS	5EA LINS	120	X	
SEMITRAILER 7500 GAL POL	S73119	VARIOUS TRAILERS	FOUR LINS	45	X	
SEMITRAILER,22-1/2 TON M871	S70027	VARIOUS TRAILERS	VARIOUS	1,495	X	
SEMITRAILER,FB,TRANSPORTR,34T	S70159	SEMITRAILER VAN: CARGO 6TON2 WHEEL W/E	FOUR LINS	50	X	

**Major Item of Equipment Substitution List**

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	SEMITRAILER LOW BED: HEAVY EQUIPMENT TRANSPORTER 60 TON W/E	S70661	39	X	
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	VARIOUS MODELS	4EA LINS	100	X	
TACTICAL FIRE TRUCK	H56391	VARIOUS MODELS	7EA LINS	12	X	
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>						
ARMORED PERSONNEL CARRIER M113A1/2	D12087	CARRIER COMMAND POST: LIGHTTRACKED	D11538	4	X	
ARMORED PERSONNEL CARRIER M113A1/2	D12087	CARRIER PERSONNEL FULL TRACKED: ARMORED (RISE)	C18234	54	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER CARGO: TRACKED 6TON	D11049	3	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER COMMAND POST: LIGHTTRACKED	D11538	36	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	1,252	X	
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	20	X	
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	CARRIER SMOKE GENERATOR:FULL TRACKED ARMORED	C12815	1	X	
CARRIER,CARGO,FT,6 TON M548	D11049	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	2	X	
CARRIER,COMMAND POST M577A1	D11538	CARRIER ARMORED COMMAND POST: FULL TRACKED	C11158	1	X	
CARRIER,COMMAND POST M577A1	D11538	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	4	X	
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	CAVALRY FIGHTING VEHICLE:M3	C76335	39	X	
CAVALRY FIGHTING VEHICLE,M3A0 (BRADLEY)	C76335	FIGHTING VEHICLE: FULL TRACKED CAVALRY HISURVIVABILITY (CFV)	F60530	6	X	
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642	HOWITZER MEDIUM SELF PROPELLED: 155MM	K57667	64	X	
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	CAVALRY FIGHTING VEHICLE:M3	C76335	3	X	
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	INFANTRY FIGHTING VEHICLE: M2	J81750	132	X	
LAUNCH,M60 TANK CHASSIS	L43664	AVLB M48 SERIES & OTHER TRACKS	VARIOUS	11	X	
RECOVERY VEHICLE,FT,MDM M88A1	R50681	RECOVERY VEHICLE FULL TRACKED: LIGHT ARMORED	R50544	23	X	
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	TANK COMBAT FULL TRACKED:105 MM M1 (ABRAMS)	T13374	155	X	
<b>WEAPONS</b>						
RIFLE,5.56 MM M16A2	R95035	RIFLE 5.56 MILLIMETER: M16A1	R94977	79,674		X

**ARNG**

Table 8

**Significant Major Item Shortages**

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

<b>PR</b>	<b>Nomenclature</b>	<b>Total Req'd</b>	<b># Units Short</b>	<b>Unit Cost</b>	<b>Total Shortage Cost</b>	<b>Rationale/Justification</b>
1	HMMWV	41,502	11,279	77,000	868,483,000	Light 4x4, high mobility, diesel powered vehicle that uses a common chassis. Fills shortages in new activations and purges the fleet of the obsolete CUCVs no longer in the Army inventory.
2	SINGARS	96,645	19,864	14,000	278,096,000	Procures SINGARS ASIP radios required to satisfy Total Force requirements. Completes ARNG requirement and removes obsolete VRC 12 Family of radios.
3	Night Vision Goggles PVS-7D/PVS-14	219,366	160,391	3,500	561,368,500	Fills shortages in high priority eSBs and divisional units and replaces the obsolete PVS-5. One of the primary mobilization challenges for Homeland Defense and overseas contingencies.
4	UH-60 BLACK HAWK HELICOPTER	687	95	14,000,000	1,330,000,000	Funding procures required UH-60s to fill vacancies left by retiring UH-1s and begins conversion of utility fleet to multi-function battalion structure.
5	HEMTTs (Wrecker and Tanker)	5,010	940	300,000	282,000,000	Fills the shortfall of wreckers and 5k gal tankers for MLRS and Aviation units. ARNG projects to be short 272 tankers and 359 wreckers after the Army ends procurement in FY 08.
6	Small Arms (M4 Carbine, M249 SAW, M240B MG, MK19 Grenade launcher)	96,588	21,285	Various	TBD	This group includes the M4 Carbine, M249 Squad Automatic Weapon (SAW), M240B Machine Gun, MK19 Automatic Grenade Launcher. This requirement fills the shortages for individual weapons that provide better firepower and better weapons to mission matches for Iraq, Afghanistan and other missions.
7	Family of Tactical Vehicles (FMTV)	28,859	26,822	150,000	4,023,300,000	Consists of a common truck chassis that is used for several vehicle configurations in two payload classes and two tactical trailers. Procures vehicles that will displace obsolete vehicles from the inventory. One variant consists of the M1088 5-ton tractor which is compatible with the M871A3 trailer.
8	Javelin Anti-Tank Missile	2,215	1,173	115,000	134,895,000	Replaces the obsolete Dragon Anti-Tank Guided Missile System. Provides a fire and forget missile that has more range and accuracy than the Dragon. Requirement is to fill divisional unfunded shortages and accelerate fielding to units mobilizing for Iraq and Afghanistan.

**ARNG**

Table 8

**Significant Major Item Shortages**

<b>PR</b>	<b>Nomenclature</b>	<b>Total Req'd</b>	<b># Units Short</b>	<b>Unit Cost</b>	<b>Total Shortage Cost</b>	<b>Rationale/Justification</b>
9	AN/PAS-13 version 1/2/3 Thermal Crew Served Weapon Sight	37,149	36,041	Various	623,509,300	This thermal sight provides night vision capability under all conditions and fills shortages and provides a critical capability for operations in Iraq and Afghanistan. Comes in a light (ver 1-rifle, \$12K), medium (ver 2 medium machine gun, \$19K) and heavy (ver 3 heavy machine gun, \$21K) configuration.
10	Movement Tracking System (MTS)	16,106	16,106	15,000	241,590,000	System used primarily with supply/support vehicles. Provides asset control by control nodes and provides blue force type tracking. This capability is a high priority for units deploying to Iraq.

### III. UNITED STATES ARMY RESERVE (USAR) OVERVIEW

#### a) Current Status of Equipment

(1) General Overview: The Army faces a much different environment than even ten years ago. Terrorism, small scale-scale contingency operations, multiple fronts and homeland security all demand a different approach for the design, use and rotation of the USAR. The threats are powerful, devious, cunning, and capable. To meet this challenge, the Nation needs an Army that is fast, mobile, flexible, strong, and modern. The USAR is an integral part of the Army's fighting forces. The USAR has been deployed more frequently in the last 12 years than during the previous 75 years. Since the terrorist attacks of September 11, 2001 nearly 80,000 soldiers in the USAR have been engaged in the GWOT, to include OEF and OIF. The USAR has served with the Army's combat forces by providing CS/CSS functions such as driving trucks, analyzing intelligence, operating field hospitals, planning logistics and serving as military police, as well as providing specialists in everything from biohazard protection and homeland security to civil engineering and information technology. Rather than a "force in reserve," the USAR has become, and serves as, a force of specialized capabilities employable as teams, units or individuals, all essential to powering the Army and defending America's interests.

## A Changing World

### Army Reserve Soldiers Serving Around the World in Every Region (Approximately 80,000 soldiers)



### Across The Spectrum of Operations

The USAR maintains a high OPTEMPO and is fully engaged, ready and relevant to fighting the nation's GWOT. Since recent world events dictate that the Army will continue to be engaged in a wide variety of contingency operations, equipment modernization and sustainment efforts must be a high priority in order to continue to successfully integrate with the Army and defend the Nation's interests across the full spectrum of operations. Adequate funding for procurement of modern equipment is essential to maintain relevancy and readiness.

Balanced modernization is part of the overall strategy for weighing current requirements against the need to continually transform to meet the changing world threats. To free up the valuable resources to support transformation, the Army has reduced investments in the current force to more limited modernization and recapitalization efforts. The focus of funding in the last

four years has been directed to support Army Transformation and other high priority programs, resulting in the reduction of new equipment procurement for the USAR. While the Army is focusing much of its effort on investments in the future, it simultaneously is intent on sustaining a decisive-win capability and maintaining a high state of readiness. This means the Army must continue to invest sufficient, but limited, resources in the current force through new equipment procurement, and by recapitalizing key combat, CS and CSS systems to maintain combat superiority.

Under the Army Transformation Plan the current force will remain until 2032, with several current systems transitioning into the future. To sustain the current force capability, many of these systems require recapitalization. Current Army recapitalization programs include few CS/CSS systems that are essential to the USAR's ability to perform its mission. Today more than 75 percent of the USAR systems exceed the Department of Defense's half-life goals. The USAR averages less than six percent of the annual P-1R projection for new equipment. At the same time, the USAR provides 31 percent of the CS and 45 percent of the CSS assets at echelons above corps to ensure the Army is able to function successfully in wartime. The USAR delivers maximum value and utility to the Army for resources expended.

## (2) Status of Equipment

(a) EOH: The USAR has the greatest requirement in achieving the degree of parity in CS/CSS systems necessary to fully support the Army Transformation and Modernization Plans and the NMS. The USAR has 93 percent of the required Pacing and Equipment Readiness Code (ERC) A items of equipment on-hand. This percentage represents current equipment on-hand rather than actual modernization requirements. The equipment on-hand percentage does include substitute items that are authorized in accordance with regulatory guidance for reporting equipment. *As a result, the USAR has some degree of obsolete or incompatible equipment, with varying compatibility problems with the AC.*

The Army invested heavily in Force Packages 1 and 2 units deemed as "early deployers" in the warfight. Unfortunately, the best-resourced units have not always been the first to deploy. In OIF/OEF 31 percent of the units deployed were not deployed in Tier or DAMPL sequence. The mobilization requirements of OEF and OIF prove there is no discrimination between Force Packages 1 through 4 units when mobilizing. As a result, the USAR was forced to redistribute assets internally throughout the force to meet the requirement, both prior to and during the mobilization of units. The original minor shortfalls were exacerbated by the increased readiness targets for unit deployments and the additional equipment requirements beyond normal authorizations. The change in mobilization requirements resulted in the USAR units that were not immediately mobilized being depleted of their equipment to support the additional requirement to fill units to 90 to 100 percent.

With the reporting criteria changes brought about by the implementation of the Strategic Readiness System and the Balanced Scorecard, anomalies in the reporting system will change and, it is anticipated, equipment on-hand metrics will show a downward trend. This may be attributed to many factors ranging from metric changes to losses of equipment through retirement or war damage. Other significant factors are the decrease in the NGREA and Army

procurement deliveries over the last five to ten years. The USAR anticipates significant equipment shortages through FY 2005 and beyond.

(b) Average Age of Major Items of Equipment: USAR equipment on-hand readiness percentages remain relatively high, but several major items of equipment are near or past their economical useful life. A few examples include the current light medium and medium tactical truck fleets, materiel handling and engineer equipment. Aging equipment means operational and sustainment costs will continue to increase while equipment serviceability rates decrease, thereby negatively impacting unit readiness. Current recapitalization initiatives and competing resources make it difficult to recapitalize USAR systems. The Army's recapitalization plan does not allow the USAR to achieve the half-life goal. The USAR must be funded at an adequate level to develop comprehensive repair, overhaul, rebuild, and conversion programs to extend the service life for existing equipment to maintain readiness and ensure mission accomplishment.

(c) Compatibility of Current Equipment with the AC: The analysis of current equipment in the USAR indicates some degree of incompatibility with the AC. In many instances, this incompatibility is a result of cascading older equipment models from the AC as they received newer, more modern equipment. Although this practice improves equipment on-hand readiness, the cascading of older equipment creates a host of maintenance and compatibility challenges, to include lack of Army training programs for mechanics and operators, the establishment of separate repair parts inventories, and special tools and test equipment unique to each equipment model. The USAR must also establish, provide, and maintain costly training programs on this older, less modern equipment in order to maintain personnel proficiency. Current resource constraints restrict sustainment efforts required to properly maintain or upgrade this older and less compatible equipment.

The USAR must be modernized to keep pace with the requirements of Army Transformation. The lag in equipment modernization, variance in operational characteristics, and unmet logistical support requirements delay total integration with the AC. From a purely economic standpoint, modernization of USAR equipment reduces associated requirements (training, spares, ammunition, etc.) needed to maintain a capability associated with an assortment of modern and current systems. As a result of an AC and RC equipment compatibility study completed in FY 2000, the following equipment, while not obsolete, is less capable and more maintenance intensive:

CUCV	40-Ton Crane
Compactors, Plate/High-Speed	Materiel Handling Equipment
3/5/10 KW Generators	Yard Truck
Trailers Over 5-Ton	Bridge Transporter
4K Forklifts, Rough Terrain	Fire Truck
2.5-Ton Truck (M-35 Series Trucks)	25-Ton Cranes
Maintenance Contact Truck	Medical Sets
Armored Vehicle Launched Bridge	Medium Girder Bridge
5-Ton Truck Family	5-Yard Scoop Loader
75-Ton, Crushing Screening and Washing Plant	

Additional procurements are required to offset Army funding shortfalls and ensure the USAR's first deploying units are equipped with the best mix of equipment. Because the RC deals with such protracted lead times and constrained resources, creativity in developing ways to stretch these resources and extend the economic life of existing equipment is essential. The USAR increasingly relies on limited overhaul and rebuild programs for equipment to retain mission capabilities. Cross-leveling and upgrading equipment through refurbishment programs must be used to meet current mission requirements and offset funding constraints.

*Cascaded CS/CSS equipment from the AC to the USAR is very minimal. Future planned force structure changes indicate no change to this trend. However, with the conversion of ARNG combat structure to CS/CSS forces, there will be a greater demand for these limited resources. In fact, some new initiatives may even shift equipment from the RC to the AC to support force rebalancing and ongoing operational requirements. These withdrawals will exacerbate an already severe CS/CSS equipment problem in the USAR.*

(d) Maintenance Issues

(1) Field Level Maintenance: The operational readiness rate in the USAR is 93 percent for reportable equipment. However, this percentage represents less than ten percent of all USAR equipment. Readiness rates remain high because commanders place most of their managerial emphasis on maintaining readiness of the reportable equipment at the expense of non-reportable equipment. *It is estimated that 44 percent of all USAR equipment has deferred services or is not receiving scheduled services due to shortages of civilian and military maintenance technicians, time, and funding.*

USAR maintenance activities, called Area Maintenance Support Activities (AMSA), have been established to perform unit-level maintenance beyond the unit's capability to perform during scheduled training assemblies. The maintenance activities are designated as (G) for ground support equipment, (W) for watercraft, or (G/W) for ground and watercraft. Average staffing for an AMSA is 10-12 personnel. Currently, AMSA shops are staffed at 50 percent of authorizations. Simply stated, the USAR is currently facing a 4.1 million man-hour maintenance backlog, which translates into a \$375M funding shortfall since our last manpower survey,

conducted in FY 2001, with only a seven percent Congressional increase in manpower. The USAR has developed programs to modernize and reduce the numbers of its facilities. This is accomplished by leveraging commercially available services and acceptable practices to reduce the backlog and the annual cost of the equipment and personnel resources needed to maintain USAR equipment readiness. This program is called USAR Logistics XXI and requires a capital investment of \$175M.

In addition to AMSAs, USAR Equipment Concentration Sites contain a maintenance branch with an area support mission, along with a storage branch for equipment that goes beyond the capability of an owning unit commander to store, maintain, or utilize at home station. To reduce maintenance requirements and increase the service life of equipment, the USAR is pursuing the use of Controlled Humidity Preservation (CHP). This program places unit sets of equipment in CHP at storage sites located at strategic locations near ports of embarkation, including overseas ports. It will not only reduce USAR maintenance costs, but support overseas training objectives of the USAR and the war-fighting CCs, while increasing the readiness and speed of deployment of high demand USAR units to the war fight. The initial capital investment required to execute this program is \$256M.

(2) National Level Maintenance: Due to limited funding, the USAR has been forced to become adept at developing alternatives to stretch funds and extend the life of existing equipment. The USAR relies on limited overhaul and rebuild programs of existing equipment to retain mission capabilities. Upgrading existing equipment, through rebuild initiatives and depot maintenance programs, is used to extend the service life of equipment.

In partnership with industry, the USAR is working to infuse commercial concepts into CSS improvement initiatives. This will allow the USAR to use commercial industry for the manufacture of combat service support equipment and follow-on rebuild or overhaul. The USAR understands the need to optimize all equipment funding sources and encourages the Army to design equipment with the intent to remanufacture. All new equipment procurements should include both prognostics, as well as diagnostics, as part of its design and manufacture.

(3) Sustainment Initiatives: The following initiatives are examples of how the USAR has partnered with industry to design and implement total rebuild and refurbishment programs.

The M109A4 Shop Van Truck is designed to function as a mobile repair shop van that can also be used to transport special equipment requiring protection from dirt, dust, and moisture. In February 2000, the USAR successfully completed two M109A4 Shop Van Proof of Principle upgrades at their Installation Materiel Maintenance Activity facility at Fort McCoy, WI. The USAR utilizes the Maintenance Training Program to modify these shop vans. The original M109A3 bodies were removed from their M35A2 truck chassis. The chassis underwent an extended service program, while the van body was disassembled, modified, and upgraded, before



M109A4 SHOP VAN

reinstalling it onto the 2½-ton extended service program M35A3 chassis, thus creating the new M109A4 configuration. The program is about 50 percent completed.

The M878/M878A1, 5-ton tractor is designed for terminal yard operations such as spotting and moving trailers. The USAR requires 141 M878 Tractors and has 36 on-hand. NGREA resources will purchase an additional 59 M878A2 tractors between FY 2002 and 2004. Ottawa Truck, the original manufacturer, conducted a proof of principle to install a new cab, controls, instrumentation, and wiring on the older model of tractor (1978), which will extend the projected service life. The USAR rebuilt a portion of the fleet's M878s in FY 2002 and FY 2003 at Red River Army Depot.



**M878/M878A1 5-TON TRACTOR**

The lubricating and servicing unit is a trailer-mounted, self-contained, gasoline-powered unit equipped for heavy duty servicing and lubrication of all types of equipment and components. The USAR lube unit fleet was manufactured in the late 1960s to early 1970s and has exceeded its projected 20-year service life. The USAR is authorized 159 units and currently has 125 on-hand. The findings of a recently conducted feasibility assessment proposes initiating a two-phase proof of principle. The first phase will replace the gasoline engines and exhaust systems with diesel engines and new exhaust systems. The second phase proposes overhauling the on-hand fleet by using the first phase product and upgrading, replacing, or rebuilding all deficient systems. In addition, there are 44 units located at Sierra Army Depot under the control of U.S. Tank Automotive and Armament Command. These units have never been issued and have been at the depot approximately nine years. The USAR is attempting to get these units issued to the USAR in an "as is" condition to be brought to 10/20 standard at our Area Support Shops.



**LUBRICATING & SERVICING UNIT**

There are three models of the 4,000-lb forklift, the Materiel Handling Equipment (MHE)-237, MHE-270 and MHE-271 forklifts. The MHE-237 forklift was manufactured between 1981 and 1983 and already exceeds its expected 15-year economic useful life. The other models were manufactured between 1995 and 1996. The USAR requirement is 726 forklifts and has 670 on-hand. By FY 2005, the USAR is projected to need 690. It is not likely that additional MHE-237s will be cascaded to the USAR. Consequently, a shortfall of about twenty 4000-lb. forklifts is projected throughout FY 2003. The USAR has initiated a proof of principle partial overhaul of one MHE-237 forklift to determine the economic feasibility of the program and to document overhaul procedures,



**4,000-LB TRUCK, FORKLIFT**

and to assess the most cost effective method of sustaining the 4,000-lb forklifts in the future. During FY 2002, 140 were rebuilt at Red River Army Depot. An additional 120 are being rebuilt in FY 2003 and 80 in FY 2004 at Red River Army Depot.

The 10,000-lb. forklift has a capacity of 10K pounds, a 48-inch load center, and can lift a load to a maximum of 121.6 inches. It has an estimated useful life of 15 years. There are 423 of these forklifts on-hand in the USAR. The forklift was manufactured and fielded from 1979 to 1985 and is past its expected 15-year life span. The All Terrain Lifter Army System (ATLAS) replaces this forklift. The USAR requirement will be 1,009 ATLAS forklifts by 2007, but is



10,000-LB TRUCK FORKLIFT

only scheduled to receive 762. Consequently, 247 of the older 10K forklifts are needed to meet requirements. The USAR implemented a program to evaluate the 10K forklift fleet and to investigate an extended service program. As U.S. Army Tank Automotive and Armament Command fields new forklifts, excess forklifts can be cycled through the maintenance facility for repair and reissue. There are 80 forklifts scheduled for rebuild in FY 2004.

(e) Modernization Programs and Shortfalls: Several years ago the Army initiated significant changes that are already being applied in the form of new capabilities available to the Joint Force, and additional and dramatic efforts are underway for transforming the Army into an even more responsive, effective, and modern force. Army Modernization is a continuous process of integrating new doctrine, training, organizations and equipment. The Army has placed priority on pursuing advanced technologies and developing new weapons systems such as the FCS. As the Army modernizes its weapon systems, the Army's highest priority equipment, current weapon systems are often redistributed to the RC. The majority of this equipment is combat arms and is not authorized in the USAR. The Army's modernization strategy should also include developing and procuring CS and CSS systems that provide increased mobility, survivability, and agility to ensure the appropriate classes of supply and services are available to support soldiers at the right time, at the right place, and with the right quantities.

The USAR is the essential provider of support and critical expansion capability to enable the Army to sustain itself over any duration across the full spectrum of military operations. Increased OPTEMPO and the diversion of new CS/CSS equipment and equipment funding from the RC have stretched the useful life of equipment and reemphasized the need for recapitalization and replacement of various major end items, parts, assemblies, and subassemblies. It is critical that equipment programmed for receipt in the P-1R (*Table 3*) is procured and distributed as planned. The Army must continue to modernize the RC units along a timeline that ensures the equipment remains interoperable and compatible with the AC.

The following equipment reflects some of those items that are most critical to the USAR in supporting Army requirements. These requirements are high dollar items that meet planned force structure initiatives of TAA 2009 and 2011:

The Joint Biological Point Detection System (JBPDs) is a semi-automated biological agent detection/identification suite mounted on a dedicated heavy HMMWV utilizing multi-



**JOINT BIOLOGICAL POINT  
DETECTION SYSTEM (JBPDS)**

complementary bio-detection technologies. It provides a rapid and fully automated detection, identification, warning, and sample isolation of high threat biological warfare agents. Capabilities include 12-hour continuous point detection and identification and it can operate on man-portable, fixed-site, vehicle, and ship platforms. The total USAR requirement is 175 at \$1.2M each. The USAR unfunded requirement is \$168M.

The FMTV is built around a common chassis and drive train, featuring over 80 percent commonality of parts and components between models and weight classes. The FMTV is a key logistics enabler and reduces the Army's logistical footprint by providing commonality of parts and components, reduced maintenance downtime, and lower operating and support costs than older trucks. It replaces maintenance-intensive trucks currently in the medium tactical vehicle fleet. Typical missions include line haul, local haul, unit mobility, unit re-supply and other missions in the combat, CS and CSS role. The FMTV consists of a common truck chassis that is used for several vehicle configurations in two payload classes. The LMTV is available in van and cargo variants and has a 2.5-ton payload capacity. The total USAR requirement is 13,329. There are currently 1,623 FMTVs projected for the USAR in POM 04-09. The USAR has 392 FMTVs with an unfunded requirement of 11,166 FMTVs. The USAR has a \$1.5B funding shortfall of FMTVs. This system is one of the USAR's highest equipment priorities.



**FAMILY OF MEDIUM  
TACTICAL VEHICLES**



**HIGH MOBILITY MULTIPURPOSE  
WHEELED VEHICLE (HMMWV)**

The HMMWV provides a common light tactical vehicle capability in a wide variety of environments. The HMMWV is produced in several configurations to support weapon systems, command and control systems, field ambulances; troop and general cargo transport, and replaces the CUCV. The average cost of the HMMWV is \$65K. The USAR requirement is 16,624. There are currently 1,096 HMMWVs projected in POM 04-09. Total shortfall is 4,664. The USAR unfunded requirement is \$303M.

The Up-Armored HMMWV is designed to provide light tactical vehicle capability in a wide variety of environments with the addition of light armor to protect soldiers against small arms fire and land mines. The Up-Armored HMMWV is critical Force Protection equipment used by Military Police, Special Operations and contingency forces. The average cost of an Up-Armored HMMWV is \$179K. The USAR requirement is 929. There are currently 287 Up-Armored HMMWVs projected in POM 04-09 and 31 pending procurement with NGREA and Congressional add funding. The USAR unfunded requirement is \$109.3M.



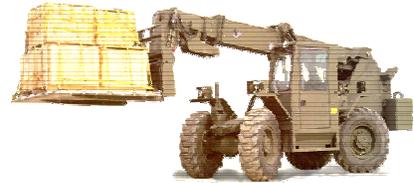
**UP-ARMORED HIGH MOBILITY MULT-  
PURPOSE WHEELED VEHICLE (HMMWV)**



**AN/PRC 138B IMPROVED HIGH  
FREQUENCY EMERGENCY RADIO  
(IHFR)**

The 138B Improved High Frequency Emergency Radio (IHFR) belongs to a family of combat net radios with a primary role of voice transmission for battle command communications. The 138B is designed to provide secure, long-range data and voice transmissions in a Joint tactical environment. The IHFR is compatible with the Joint Tactical Radio System (JTRS). The USAR requirement is 1,750; the shortfall is 1,344. The total unfunded requirement is \$57M.

The ATLAS is a self-deployable rough terrain, manually operated forklift capable of operating efficiently in a wide variety of environmental conditions. The ATLAS lifts 10,000 lbs and can stuff and un-stuff various sized containers. The USAR requirement is 946 at a cost of \$100K each. There are 304 ATLAS on-hand. The USAR is projected to receive 436 in POM 04-09 and 34 with Congressional add funding. The USAR has an unfunded requirement of \$6M.



**ALL TERRAIN ARMY LIFTING  
SYSTEM (ATLAS)**



**MULTI-BAND SUPER HIGH  
FREQUENCY (SHF) TERMINAL  
(PHOENIX)**

The PHOENIX provides high-capacity, Inter-and Intra-Theater range extension support at selected EAC and Corps signal units. The terminal will provide a highly mobile, strategic, transportable, wide band communications capability, and will replace selected AN/TSC-85/93 terminals and complement the AN/TSC-85/93 SLEP at selected EAC and Corps signal units. The USAR requirement is 33 terminals at a cost of \$1.8M each.

The Deployable Medical Systems (DEPMEDS) family provides deployable hospitals with standard medical care equipment and consists of medical components, sets, and medical equipment to provide current technology and life-saving clinical support for soldiers in the Theater of Operations. Shortages of DEPMEDS components in the USAR are Medical Materiel Sets for triage/ emergency/pre-operation, operating room, and post-operation/ intensive care unit. Total requirement is 361 systems. Unfunded requirement is \$21.9M.



**DEPLOYABLE  
MEDICAL SYSTEMS  
(DEPMEDS)**



**MOVEMENT TRACKING  
SYSTEM (MTS)**

The MTS is a critical Logistics enabler that provides visibility for the Joint Logistics Corporate Enterprise and enables Distribution Based Logistics. The MTS provides asset visibility and situational awareness that assists CS/CSS commanders and their staffs in planning and executing CS/CSS operations. The MTS allows for continuous asset visibility across the tactical area of operations. The USAR has a requirement of 10,573 systems at a cost of \$12K each. The Army will

purchase 708 MTS with FY 2003 Congressional add funding. The USAR unfunded requirement is \$118.3M.

The Rough Terrain Container Handler (RTCH) is the primary materiel handling equipment capable of lifting standard 20- and 40-foot-long International Standardization Organization containers weighing up to 53,000 pounds. The RTCH can be operated on beaches, rough terrain, and unimproved surfaces and can stack containers three high. The RTCH is air deployable and can be used to lift containers and pre-positioned Palletized Load System (PLS) flatracks, breakbulk cargo and heavy palletized Class V (ammunition) loads. The USAR requirement is 275 at \$525K each; there are 32 on-hand. The USAR is projected to receive 122 in POM 04-09. The USAR unfunded requirement is \$63.5M.



**ROUGH TERRAIN CONTAINER HANDLER (RTCH)**



**NIGHT VISION GOGGLES (NVG) AN/PVS-7D**

The NVG is a lightweight, binocular goggle that enables soldiers to operate more effectively and safely in day or night and under degraded battlefield conditions. It uses a single, passive, third generation image intensifier tube. The goggle is used in combat, CS and CSS operations. The USAR requirement is 40,917 at \$3.1K each; on-hand are 17,215. The unfunded requirement is \$73.6M.

(f) Overall Equipment Readiness: The Army Equipping Policy requires units to be fielded in a “first to fight, first to support” basis, yet the Army Order of Precedence and current operational requirements often divert equipment assets that are critical to USAR.

Prior to the start of mobilization for OIF, the USAR had reached a level of fill for reportable equipment, considered essential to effective performance of a unit’s mission of 91 percent for required quantities with substitutes. Without substitutes, the percentage of items on-hand would have dropped below 70 percent. While authorized, these substitutes are often less capable. Upgrading existing equipment through rebuild initiatives has extended the life of some items, freeing funds to purchase other required items. The USAR continues to rebuild, upgrade, and overhaul equipment by partnering with industry and employing USAR service members to enhance training.

In FY 2003, the USAR rebuilt the following systems to enhance equipment readiness and capability:

99-HMMWV	\$17.5M – Various Watercraft & Rotary Wing Equipment
111 - Line Haul Tractors	\$2.9M Communications Equipment
140 - 22.5 Ton Trailers	102 - 5 Ton Cargo Trucks
9 - Armored Vehicle Launch Bridges	19 - HETT Cargo Truck/Fuel Tankers
17 - 5 Ton Dump Trucks	122 - 10K/4K Forklifts
65 - 5000 Gallon Fuel Tankers	12 - Yard Tractors

The USAR's acquisition plan for purchasing new equipment with NGREA is in line with known Army modernization plans. The following equipment was purchased with NGREA funds and delivered in FY 2003.

50 - HMMWVs	Multiple Parts for Laser Marksmanship Training System
104 - Engineer Inflatable Boats	582 - High Mobility Trailers
5 - UH-60L Blackhawk Helicopters	36 - Fuel System Supply Points

The following equipment was purchased with NGREA funds during FY 2003 for delivery in future fiscal years.

22 - Up-Armored HMMWVs	13 - Top Handlers, 20 Foot
91 - Refrigerated Container Systems	673 - Light Tactical Trailers
99 - Semi-Trailer Flat Bed 22.5 Ton, M871A3	Multiple Parts for Laser Marksmanship Training System

(g) Other Equipment Specific Issues

(1) Tactical and Support Vehicles

a) The current status of the light medium 2.5-ton, and medium 5-ton tactical wheeled vehicle fleet is a major concern for the USAR. These systems are one of the USAR's highest equipment priorities. Based on the recent migration of funding from the FMTV program to the Future Tactical Truck System, the elimination of the extended service program, and decrements to projected FMTV procurements in FY 2004-2009, the USAR should receive 1,714 of its required 13,296 systems by FY 2009. To date, the USAR has received less than 3 percent of this 1,714 vehicle commitment. As a result, the USAR is utilizing 2.5 and 5 Ton trucks of 1960's technology as authorized substitutes for the more modern FMTV.

b) The USAR is short approximately 5,275 HMMWVs, to include the up-armored model. To offset this shortage, the USAR committed \$250K in FY 2002 to the modernization of the contact maintenance truck fleet. This shortfall also prompted the USAR to commit \$9.1M for 152 M1097A2 model HMMWVs to be distributed during FY 2002-2003. Procurement of these vehicles for the USAR satisfies only interchange requirements, such as part of a communication system or a smoke generation unit. The critical OIF up-armored HMMWV shortage will impact distribution of up-armored HMMWVs to the USAR. The USAR has a requirement of 929 up-armored HMMWVs and was projected to receive 287 vehicles in FY 2004-2009.

(2) Communication-Electronic Equipment: The USAR, while maintaining 13 percent of the Army's Signal capability, requires extensive Commercial-Off-The-Shelf (COTS) upgrades to effectively offset AC Signal unit OPTEMPO. Currently, over 50 percent of the AC Signal force is deployed in support of Army, Joint, and Combined forces throughout the world. Current Signal equipment utilizes 20-year-old technology such as Mobile Subscriber Equipment

(MSE) and Tri-Service Tactical Communications (TRITAC) Program communications systems that were originally designed to primarily transmit voice communications vice the current war-fighting commander's requirements of real time data such as imagery, common operational picture, Army Battle Command System, Non-Secure Internet Protocol Router Network (NIPRNET), Secret Internet Protocol Router Network (SIPRNET), battlefield Video Tele-Conferencing (VTC), etc. Through the years, the AC procured COTS technology to offset older technology through the use of operational, maintenance, and contingency funds. The USAR does not have this funding capability. As a direct result, some USAR signal units were not deployed as a result of the supported Commander's reluctance to degrade the overall communications network with the insertion of older, less capable communications equipment. In a simplified example, the War-fighting Commanders expect the same type of communications support in the field as in garrison. AC units provide garrison-type LAN connectivity, whereas the USAR provides the old 9.6KB telephone system support. Therefore, the data requirements cannot be met. In addition to breaking the old acquisition paradigm, it is essential that COTS technology be fielded concurrently to the USAR to ensure a totally seamless digitized force.

Major systems projected for receipt by the USAR in FY 2003 and beyond as a result of Army P-1R, NGRER, or modification/rebuild programs include:

Family of Medium Tactical Vehicles	Lightweight Maintenance Enclosures
Shop Vans, M109	AVLB Upgrades to MLC 70
HMMWVs	Trailer Conversions from M101A1 to M101A3
SINCGARS Radios	Fuel Tankers, M967A1
HEMTT Fire Trucks	M915A3, Truck Tractor Line-Haul
Semi-Trailer, Tank 5K	Palletized Loading Systems
Water Purification Systems	Generator Sets & Associate Equipment
Welding Shop Trailers	Rough Terrain Container Handler
JPIDS	Yard Tractor, M878A2
Semi-Trailer, 22.5 T, M871A3	Communications Equipment
Fuel Distribution Systems	Field Feeding Equipment
Laser Marksmanship Training Systems	Refrigeration Container Systems
Contact Maintenance Trucks	Tactical Bridging Equipment
Light Tactical Trailers	Combat Support Medical Equipment
Family of Heavy Tactical Vehicles	Water Purification Systems

b) Changes Since Last NGRER: As a result of OIF, there are several initiatives within DoD to rebalance the forces to meet the challenges and demands of the GWOT. This rebalance requires the transfer of some capabilities from the RC to the AC, refinement of the mobilization process to minimize the time required from alert to deployment, and use of the RC to meet predictable, long lead-time rotational requirements. The transfer of capabilities from the RC to the AC will require the diversion of new equipment procured for the RC, as well as the transfer of equipment from the RC to the AC. The rebalance of the forces may initially impact the delivery of new equipment to the USAR, delaying deliveries for two to four years.

The USAR has embarked on an ambitious initiative to restructure itself to a fully transformational force providing ready soldiers, ready units, and shortened deployment timelines. This initiative is the USAR Federal Reserve Restructuring Initiative (FRRI). Transforming to meet the challenges of a changing environment is nothing new to the USAR; what is different is the sense of urgency. We are at war! The FRRI will eliminate broken or irrelevant structure while establishing rotational depth and creating an Individual's Account based on the Combatant Commander's requirements. The reduction in structure will produce excess equipment that can be cross-leveled internally to increase the equipment-on-hand quantities for tactical wheeled vehicles, materiel handling and engineer equipment.

The USAR receives equipment through four sources: Army P-1R, NGREA, cascading of equipment from the AC, and Congressional adds.

The P-1R is a subset of the Army Procurement Programs (P-1) exhibit and reflects the Army's estimate or projection for those funds, which will be used to procure equipment for the RC. As stated earlier, the USAR is projected to receive three to six percent of the total P-1R funding during POM 04-09. Unfortunately, the P-1R is a distribution planning document and not a budget execution document. Requirements are based on best estimates for future needs and there is lag time between purchase and delivery dates, making fielding and tracking of USAR equipment from the P-1R a challenge. In FY 2003, key systems such as FMTV, HMMWV, ATLAS, and RTCH, projected in the P-1R, were either decremented in total or procurements continuously "slipped to the right," thus shorting the USAR of much needed modernized equipment.

The USAR provides 31 percent of the CS and 45 percent of the CSS assets to the Army. Since the RC constitutes the majority of the CS/CSS provider for the Army, cascading of logistics equipment is very minimal.

The USAR relies heavily on NGREA and Congressional adds to offset shortages in the P-1R. The NGREA is an invaluable tool, making resources beyond the President's budget available to the USAR. It offers the most flexible and direct method of procuring modern CS/CSS equipment. It also enhances equipment interoperability with the AC through modernization while increasing equipment-on-hand readiness percentages.

From an equipment perspective, the greatest risk facing the USAR in support of the NMS is the potential deferment of key logistics equipment procurement programs identified in the P-1R over the FYDP. Consequently, the Army procurement plan identified for USAR fielding in the P-1R must be monitored closely to ensure proper execution, since there are no formal procedures within the Department of the Army to compare equipment projections with what is actually fielded.

c) Future Years Program (FY 2005 – FY 2007)

1) FY 2007 Equipment Requirements: Previously identified modernization shortfalls continue through FY 2006.

2) Anticipated New Equipment Procurements: *Table 3* reflects the service-planned procurements from P-1R data.

3) Anticipated Transfers from AC to RC: *Table 6* reflects data regarding transfers from the AC to the USAR. A major concern by the USAR is the poor condition of equipment that is cascaded. HQDA is currently addressing this issue. To offset this problem, the USAR has to invest the time and resources in repairing and rebuilding cascaded equipment prior to issuing it to units.

4) Anticipated Withdrawals from RC Inventory: *Table 5* reflects USAR projected equipment transfer and withdrawal quantities.

5) Equipment Shortages and Modernization Shortfalls at the end of FY 2007: Shortages of common systems such as FMTVs, HMMWVs, C4I items, and MHE are detractors to both readiness and training. Compatibility of equipment will continue to be a problem for communications and logistic support systems.

In order to ensure maximum compatibility of high priority units, equipping is based on a force packaging match using the “first to fight” principle. This works well for USAR units planned for early deployment, but creates a problem with later deploying units which have older substitute equipment. In the current environment, USAR units that deploy late for a crisis often are early deployers for peacetime missions. Therefore, mobilization of these late deploying units, for other than war operations, requires last minute redistribution of equipment to bring the deploying unit to an acceptable level of readiness.

6) Other comments: The Department of the Army defines recapitalization as the maintenance and systemic upgrade of currently fielded systems to ensure operational effectiveness and a near “zero time/zero mile” system using research, development, test and evaluation, procurement, or operation and maintenance funds. The objectives of the Recapitalization Program include extending maintainability, safety, and efficiency, and enhancing capability. Recapitalization may include pre-planned product improvements, ESPs and major modifications. These programs alone are not recapitalization unless they restore the system to a near “zero time/zero mile” condition.

The USAR depot maintenance program is a repair-and-return-to-unit program. However, the present Army recapitalization program under development is very different, in so much as it does not return equipment to the losing unit. Equipment is to be reissued in unit sets by DAMPL sequence to all Army units. Consequently, as the RC turns in their older equipment for recapitalization, other equipment will need to be cascaded to the RC to replace the equipment being recapitalized. Consequently, it is crucial that the RC receive equipment that is mission capable and compatible with its AC counterparts.

d) Remaining Shortfalls and Unfunded Requirements: The USAR’s P-1R projects the USAR will receive limited quantities of modern equipment during FY 2006 and FY 2007. Although the distribution is limited, certain systems are crucial to USAR modernization. Projected deliveries of HEMTT chassis tactical fire trucks, FMTV, RTCH, and the ATLAS will replace aging

equipment in high priority, high demand USAR units. Critical logistics enablers such as electric forklifts, CSS automation systems, PLS, Petroleum and water distribution systems, and communications equipment remain under-funded for the USAR.

The increase in recent OPTEMPO, in support of OIF, challenges equipment materiel readiness. Increased USAR mobilizations and deployments increase the need for repairs, services, and the replacement of worn or destroyed equipment. Increased mission requirements have forced the Army to accept risk in modernization of CS and CSS equipment. Because of funding constraints and the need for additional OPTEMPO funds, procurement programs have been maintained at minimum sustaining rates or totally decremented. As the FYDP is modified, it is vital that the integration of the AC and RC into a “seamless” force continues with appropriate modernization to ensure interoperability and compatibility.

The cumulative depot maintenance shortfall from FY 2001 to 2004 stands in excess of \$46M with an estimated shortfall of \$18M in FY 2005. This shortfall in depot maintenance funding will exacerbate the degradation of aging equipment, severely impacting training objectives, contingency operations, and materiel readiness.

e) Summary/Conclusions: It is a precedent-setting time for the Army as it transforms core business processes and force designs during a time of war on multiple fronts. The challenges are many, but our mission remains the same: to provide trained and ready units and individuals to mobilize and rapidly deploy in support of the NMS.

As the AC transforms, so does the USAR to a capabilities-based force to meet potential threats. The effectiveness of the USAR as a combat multiplier to the Army is dependent on its ability to attain modernization goals. The Army modernization strategy must focus on developing and procuring systems that provide the key capabilities, such as increased mobility, survivability, and agility, to the soldiers and weapons systems they will support. The USAR is the premier provider of support forces; hence it is imperative that the USAR receives adequate and consistent funding in the Army’s procurement accounts to support modernization and recapitalization requirements.

In past years, NGREA and Congressional adds have played a key role in the modernization efforts of the USAR. The lack of adequate funding for equipment procurement and modernization is a challenge to maintaining readiness. The need to fully fund ongoing operations and current readiness, combined with continued pressure on the defense budget because of political and fiscal constraints, is keeping procurement accounts from being raised to levels sufficient to assure the modernization of our CS/CSS forces. The GWOT increased the need for strategic responsiveness across the full spectrum of operations. To achieve these goals, CS and CSS forces resident in the USAR must be modernized and recapitalized on a synchronized and complementary timeline with the combat forces. Significant reductions in the logistics footprint will not be attained unless key logistics enablers such as FMTV, HMMWV, MHE, and communications systems are procured in sufficient quantity to support the requirements. We cannot maintain equipment readiness and achieve the transformational modernization goals if we are forced to endure another procurement holiday. The USAR is an

accessible and integral full partner of the Army....it is in America's interest to provide American Soldiers the best and most modern equipment.

## **Future State: A Transformed Army Reserve**



**Skilled Soldiers  
& Modern  
Equipment . . .**



**. . . Trained &  
Ready . . .**



**. . . To Go  
Anywhere**

USAR

Table 1

**Consolidated Major Item Inventory and Requirements**

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
<b>AIRCRAFT</b>							
AIRPLANE CARGO-TRAN, C-12F	A30062	3,068,422	26	26	26	26	0
HCPTTR ADVANCED ATTACK	H28647	10,680,000	44	44	44	44	21
HCPTTR CGO TRANS CH47D	H30517	1,820,458	27	27	27	27	84
HCPTTR BLACKHAWK UH60L	H32361	11,188,480	4	8	24	24	24
<b>CHEM/BIO EQUIPMENT</b>							
ALARM BIOL AGENT M31	A48430	785,483	35	35	35	35	175
ALARM CHEMICAL AGENT	A32355	8,432	4,631	4,631	4,631	4,717	597
COL PROT EQ NBC M20	C79000	17,688	178	182	186	186	169
DECONTAMINATING APPARA	D82404	23,121	533	538	551	551	1,195
DECONTAMINATING APPARA	F81880	21,626	48	48	48	48	48
GEN ST SMOKE GN: M157	G51840	26,622	403	427	427	427	432
GENERATR SMK ABC-M3A3	J30492	8,500	1	1	1	1	0
MASK CH BI C V M42 SM	M18526	640	1,739	1,739	1,739	1,739	1,390
MASK CHEM BIO M40 SM	M12418	202	178,332	178,387	178,411	178,411	173,335
MASK FLD ABC-M17A1 S	M11895	93	5,704	5,704	5,706	5,706	3,122
MONITOR CHEMICAL AGEN	C05701	7,500	3,173	3,173	3,173	3,218	5,289
MTG KT SM GEN M284	M17931	2,740	502	502	502	502	457
RADIAC SET AN/PDR-75	R30925	2,978	605	605	608	623	1,395
RADIAC SET AN/UDR-13	R31061	631	7,690	7,690	7,690	7,690	7,690
RADIACMETER IM-93A/UD	Q20935	73	3,880	3,880	3,925	3,995	710
<b>COMBAT COMMUNICATIONS</b>							
CENTRAL OFFICE COMMO	C41311	2,801,000	6	6	6	6	2
DATA TRANSFER DEVICE: AN/CYZ-10	D78555	1,898	5,326	5,326	15,213	5,397	0
COM TE CRTL AN/TSQ-84	E60197	100,000	0	0	0	0	2
HF RADIO SET: AN/GRC-1	H35404	37,000	158	166	166	172	853
MOBILE SUBS AN/VRC-97	T55957	110,000	649	649	649	649	858
RA TER AN/TRC-170(V)2	R92967	2,000,000	16	16	16	16	16
RA TER AN/TRC-170(V)3	R93035	1,000,000	16	16	16	16	16
RAD SET AN/PRC-119	R55268	6,418	4	4	4	4	10
RAD SET AN/VRC-89	R44795	14,828	5	5	5	5	0

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RAD SET AN/VRC-90	R45203	8,576	80	80	80	80	9
RAD SET AN/VRC-92	R45339	15,597	2	2	2	2	0
RADIO SET: AN/GRC-106	Q32756	18,602	273	273	273	277	47
RADIO SET: AN/GRC-213	R30895	20,000	13	14	14	14	439
RADIO SET: AN/PRC-104A	R55200	12,500	58	58	58	58	325
RADIO SET: AN/VRC-90A	R67908	13,178	6,479	6,616	6,667	6,681	7,480
RADIO SET: AN/VRC-91A	R68010	23,249	1,063	1,088	1,088	1,088	1,686
RADIO SET: AN/VRC-92A	R45407	21,238	481	547	547	547	740
RADIO ST AN/PRC-119A	R83005	10,117	1,766	1,794	1,794	1,794	1,906
RADIO ST AN/VRC-87A	R67160	12,109	368	368	368	368	218
RADIO ST AN/VRC-88A	R67194	12,519	2,295	2,375	2,375	2,375	2,484
RADIO ST AN/VRC-89A	R44863	22,822	1,333	1,533	1,552	1,552	2,299
RADIO TELETYPEWRITER S	Q90100	52,347	5	5	5	5	0
RADIO TERMINAL SET: AN	R39588	640,000	15	15	15	15	2
RD SIG AN/APR-39A(V)1	D03159	39,984	75	75	75	75	16
REPEATER SET RADIO: AN	R39520	619,000	44	44	44	44	0
TEL DIGITAL TA-1035/U	T45408	2,459	2,377	2,377	2,377	2,377	0
CENTRAL OFFICE COMMO	Z22178	2,000,000	11	11	11	11	0
DIGITAL APPL AN/UKY-128	Z26542	35,000	2,067	2,067	2,067	2,067	0
LIGHTWEIGHT DIGITAL FAX AN/UXC-10	Z26923	15,000	15,000	15,000	15,000	15,000	0
RADIO ST REPEATER AN/TRC-174B	Z54228	331,000	33	33	33	33	0
RADIO SET TERMINAL AN/TRC-173B	Z57406	346,000	36	36	36	36	0
RADIO SET REPEATER AN/TRC-138C	Z63463	349,000	32	32	32	32	0
RADIO SET TERMINAL AN/TRC-175B	Z75641	354,000	11	11	11	11	0
<b>CONSTRUCTION EQUIPMENT</b>							
CRANE 264	F36090	8,000,104	1	1	1	1	0
CRANE WHL M320RT	F39378	162,393	6	6	6	6	28
CRANE WHL MTD	C36151	58,481	106	106	106	106	51
CRANE, WHEEL MOUNTED (ATEC)	C36586	205,270	93	93	130	130	0
CRANE WHL MTD	C39398	210,857	92	92	92	92	74
CRANE-SHOVEL CRWLR MTD	F40474	270,000	9	9	9	9	14
CRNE TRK 25T MT 250	F43429	160,953	66	66	66	66	4
CRUSHING SCREENING AND WASHING PLANT	F49673	2,000,000	5	5	12	12	0
GRADER ROAD CAT 130G	G74783	67,724	210	210	210	210	185
SECTIONALIZED GRADER	J74920	264,000	0	0	0	0	0

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MIXING PLANT ASPHALT:	M57048	1,254,600	4	4	4	4	4
RLR PNEU HYSTER C530A	S11793	28,706	4	10	10	10	43
ROLLER ESSIK VR55TM	S10682	17,086	3	3	3	3	18
ROLLER VIBRATORY RS28	S12916	45,183	44	47	47	47	94
SECTIONALIZED SCAPER	S29971	303,000	18	18	18	18	0
SCRAPER EARTH MOVING S	S56246	120,410	199	199	199	199	194
TRCTR WHLD EXCAV	T34437	69,583	310	313	313	317	462
HYDRAULIC EXCAVATOR TYPES I,II,III	MULTI	298,171	80	80	80	80	0
HEAVY DRY SUPPORT BRIDGE	Z11534	5,000,000	20	20	20	20	0
MODULAR CAUSEWAY SYSTEM	Z14597	1,500,000	9	9	9	9	0
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>							
BATH UT SH-63LP	B43663	8,186	21	21	21	21	112
COMBAT SERVICE SUPPORT CONTROL SYSTEM (CSSCS)	C56827	51,526	69	172	274	274	0
CONTAINER, ASSEM REFRIGERATION 9K BTU	C84541	58,326	65	65	95	95	0
FLOODLIGHT ST TLR MTD	F79334	4,489	107	107	107	107	1,494
FOOD SANITATION CENTER	S33399	12,735	184	264	326	368	873
LAUNDRY UNIT TRAILER	L48315	54,944	158	158	158	158	32
REFRIGERATION UNIT MEC	R61428	9,435	253	253	253	253	250
LAUNDRY ADVANCED SYSTEM	Z90400	409,000	98	98	98	98	0
<b>ELECTRIC EQUIPMENT</b>							
POWER PLANT AN/MJQ-36	P28151	33,627	7	7	7	7	8
POWER PLANT ELEC DED T	P28083	11,000	15	18	18	18	17
POWER PLANT ELEC TM: 3	P27819	45,447	58	58	58	58	0
POWER PLANT: ELECTRIC	P42126	63,941	22	22	22	22	8
POWER PLANT: ELECTRIC	P42194	70,891	8	8	8	8	3
PWR DIESEL ENG	P42262	36,558	119	119	119	119	19
PWR SUPPLY PP-6224/U	P40750	1,491	1,198	1,208	1,215	1,215	2,564
EL S AN/ASM-146B L/P	H01907	87,418	88	88	88	88	107
EL SHP AN/ASM-147B	H01912	63,212	43	43	43	43	17
<b>ENGINEER, NON-CONSTRUCTION</b>							
DETECT SET MINE VP200	G02341	2,944	1,549	1,622	1,622	1,622	1,884
PLATE PRO SEC TOPO	P06082	57,423	0	0	0	0	0
JAVELIN	C60750	481,418	119	57	57	57	0
<b>GENERATORS</b>							

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GEN SET DED TM: 10KW 6	G42170	13,000	245	320	326	327	443
GEN ST DSL ENG TM: 30K	J36383	20,810	178	178	178	181	11
GEN ST DSL MEP 002A	J35813	8,332	971	1,021	1,021	1,021	112
GEN ST DSL MEP 003A	J35825	13,635	421	421	421	421	23
GEN ST SMKE M56	G58151	243,075	0	0	600	600	0
GEN ST DSL MEP 805A	G74575	21,998	63	66	66	79	154
GEN ST DSL MEP 806A	G12034	25,073	110	112	112	112	156
GEN ST DSL MEP-802A	G11966	8,145	770	842	1,185	1,478	2,706
GEN ST DSL MEP-803A	G74711	6,979	353	503	588	612	957
GEN ST DSL MEP-804A	G12170	16,160	85	89	89	89	181
GEN ST MEP 009A	J40158	49,440	5	5	5	5	0
GEN ST MEP 016A	J45699	4,491	662	668	668	668	110
GEN ST MEP 108A	J40150	19,204	0	0	0	0	4
GENERATOR SET DIESEL E	G35851	28,521	48	49	50	50	85
GENERATOR SET DIESEL E	G53778	19,080	142	171	197	208	585
GENERATOR SET: DIESEL	G78306	31,596	31	41	41	41	77
<b>INFORMATION SECURITY</b>							
KEY GEN TSEC/KG-81	E03123	8,226	4	4	4	4	0
<b>MEDICAL EQUIPMENT</b>							
ANESTHESIA APP 4 CYL	A62773	23,623	122	122	122	122	12
COMBAT AUTOMATED SERVICE SUPPORT-MEDICAL	C18514	204,925	0	0	10	10	0
DEFIBRILLATOR CARDIOS	D86072	31,201	593	841	1,037	1,038	294
MES SICK CALL FLD (2)	M30156	8,380	73	75	82	82	67
MES TRAUMA FIELD (2)	M30499	22,380	75	77	81	81	67
MMS CENTRAL MATERIAL	M08417	646,901	134	184	224	224	79
MMS INTER CARE WARD	M08599	132,752	327	339	392	392	264
MMS LABORATORY GEN	M72482	200,320	17	17	17	17	0
MMS OPERATING ROOM	M72936	377,660	131	181	221	221	79
MMS POST-OP/ICU DEP	M09576	177,749	253	351	425	425	104
MMS X-RAY DEPMEDS:	M72300	281,240	41	49	62	62	27
MMS X-RAY MOB DEP	M86675	203,223	36	36	39	39	25
OPERATING & TRMT UNIT	P19377	14,858	24	24	24	24	316
OSCILLOSCP AN/USM-488	P30693	2,084	323	323	323	323	249
TENT 64LX20W MEDICAL	T47745	23,752	595	613	708	708	517
TENT TEMPER (SURG)	T47813	27,000	101	101	101	101	0

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TRK AMB 2 LITTER M996	T38707	49,357	6	6	6	6	8
TRK AMB 4 LITTER M997	T38844	113,998	227	227	227	227	218
<b>MATERIAL HANDLING EQUIPMENT</b>							
BED CGO PLS M1077A1	B83002	16,633	1,804	1,935	2,154	2,198	2,168
SPREADER LIFT FRT CON	U12203	4,880	89	89	89	89	74
ROUGH TERRAIN CGO HANDLER	T16611	525,000	281	281	281	281	275
TRAILER: PALLETIZED LO	T93761	46,731	698	704	717	782	1,375
TRK LF CBD 6000 LB	T49096	11,828	14	14	14	14	0
TRK LF DD IHC M-10A	T49119	75,923	428	428	428	428	9
TRK LF DD MDL DV43	T48941	159,138	153	153	153	153	123
TRK LFT FK VAR RCH RT	T73347	100,199	472	630	723	888	901
TRUCK LIFT FORK: DED 6	T48944	72,370	500	500	500	500	298
TRUCK LIFT FORK: DSL D	T49255	47,692	598	598	598	598	580
TRUCK LIFT FORK: ELEC	X50436	28,098	2	2	2	2	0
<b>OTHER PROCUREMENT</b>							
CL STEAM PRE JT TR MT	C32887	18,528	234	234	234	234	719
COMPCTR HS KORNG K300	E61618	135,186	47	47	47	47	53
DIG D GEN SG-1139/G	D37041	5,100	75	79	79	79	84
DIVING EQUIPMENT SET	D32859	7,005	0	0	0	0	0
DIVING EQUIPMENT SET	D32927	55,753	2	2	2	2	0
ELEC KEY KYK-13/TSEC	E98103	235	2,660	2,660	2,661	2,661	191
FILT SEP DL13217E9320	H52087	4,041	1,141	1,141	1,141	1,141	1,374
TACT FIRE FGHT TRK	H56391	552,238	67	67	67	67	0
WOLVERINE	H82510	6,400,000	60	60	60	60	0
HYPOCLNTN ST A506	K60988	14,342	78	78	78	78	112
INTERIOR BAY BRDG FLO	K97376	62,910	213	213	213	213	212
LASER INFR S AN/GVS-5	L40063	4,879	12	12	12	12	30
LDR GP BUCK CLRK 175B	L76321	75,450	33	33	33	33	46
LDR SCP 950BNS	L76556	58,890	160	160	160	160	140
LTWT DIG FAC AN/UXC-7	L67964	21,972	728	756	780	793	2,215
MELIOS LASER AN/PVS-6	M74849	22,015	1	2	2	2	196
NCD KYX-15/TSEC	N02758	2,300	1,754	1,754	1,754	1,754	96
NGT VIS AN/UAS-11(V)1	N05050	69,641	0	0	0	0	5
NI VI AN/PVS-4 W/IMG	N04732	8,535	3,583	3,658	3,798	3,865	4,448
NIGHT VIS G AN/PVS-7B	N05482	3,578	15,962	17,234	18,241	21,425	43,234
NIGHT VIS GL AN/PVS-5	N04456	4,300	3,506	3,506	3,506	3,506	106

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NIGHT VISION SGT TRAC	N23721	23,099	29	29	29	29	19
GLOBAL POSITIONING SYSTEM	N95862	1,331	5,176	5,176	5,176	5,176	0
PRESS SEC REPRO SEMIT	P50154	450,000	0	0	0	0	2
S/E A/R FM SUPPL NO 1	T25619	58,235	43	43	43	43	42
S/EQ DAVEY COMP CMU-5	T10138	16,361	18	18	18	18	5
SP ANL AN/USM-489(V)1	S01416	12,917	5	11	14	14	43
SHELTER TACT EXPAND	S01359	99,000	135	135	135	135	0
SPCH SEC EQ TSEC/KY57	S01373	1,930	516	516	516	516	242
SSE: 28VRED TSEC/KY58	S01441	3,063	163	164	164	164	32
TOW-NI S EQ AN/UAS-12	N04982	61,791	20	42	42	42	22
WELDING SHOP TRLR MTD	Y48255	75,000	229	229	229	229	0
M58 MECH TURB SMKE SYS	G87229	410,000	42	42	17	14	0
MODERN BURNER UNIT	Z21129	2,700	5,115	5,115	5,115	5,115	0
INTEG SYST CONT	Z35620	1,141,010	4	4	4	4	0
<b>PETROLEUM EQUIPMENT</b>							
DRUM FABRIC 500 GAL	D69050	2,088	339	339	339	339	624
FUEL SYS SUP PT	J04717	30,213	295	295	295	295	366
FWD AREA RFL EQUIP	H94824	9,093	111	128	128	128	152
LAB PETRO SEMI TRL MT	L33800	650,000	9	9	9	9	17
PROCESS MACH 7GL TANK	P98514	13,112	70	86	102	102	52
PRT PLT SW TRNSPTBL	P61665	283,221	11	11	11	11	8
PUMP ASSY W/REGULATOR	P97119	26,244	116	116	116	116	180
PUMP CTRF GD FM 125GM	P92030	2,267	615	615	620	620	799
PUMPING ASSY 600 GPM	P97369	27,426	193	193	193	193	204
TANK ASSY 20000 PETRO	T12620	6,065	232	232	232	232	660
TANK ASY PTR 10000GAL	V12552	6,990	489	489	489	489	1,534
TERMINAL TACT PETRO	T56041	1,400,873	0	0	0	0	15
TEST KIT PETROLEUM AV	T05741	4,565	141	141	141	141	253
VIEWER INFRARED: AN/PA	Y03104	16,779	0	0	0	0	48
<b>REPAIR EQUIPMENT</b>							
ELECTRONIC SHOP SEMITR	H01855	169,817	73	73	73	73	58
INST REP SHP M185A3	K90188	94,021	7	7	7	7	0
S/E AUTO REP FM BASIC	T24660	120,827	39	39	39	39	48
SHOP EQUIPMENT AUTO MA	T25756	124,948	11	11	11	11	21
TOOL OUTFIT HYDRAULIC	T30377	83,000	50	50	58	58	94
WELDING SHOP TRAILER M	W48391	75,000	173	182	182	190	215

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WELDING SHOP TRAILER M	Y48323	9,603	7	7	7	7	5
<b>RAIL &amp; FLOAT EQUIPMENT</b>							
LANDING CRAFT MECHANIZ	L36739	162,612	19	19	19	19	19
LANDING CRAFT UTILITY:	L36876	1,530,000	5	5	5	5	1
LANDING CRAFT UTILITY:	L36989	5,000,000	9	9	9	9	20
LIGHTER AMPH LARC-LX	L67508	390,000	0	0	0	0	0
RAMP BAY BRIDGE FLOAT	R10527	70,575	63	75	75	86	86
RAMP LOADING VEHICLE	R11154	7,229	254	254	254	254	195
TRANSPORTER BRDGE FLO	X23277	102,218	17	17	17	17	10
TUG: LARGE COASTAL AND	T68330	1,250,000	5	5	5	5	6
VESSEL LOGISTIC SUPPOR	V00426	9,999,000	1	1	1	1	3
<b>TACTICAL VEHICLES</b>							
REC VEH FT MED M88A1	R50681	1,210,755	34	35	35	35	26
SEMITRAILER VAN: REPAI	S74832	32,952	61	61	61	61	135
STLR FB 34T M872	S70159	20,004	2,741	2,742	2,771	2,771	2,993
STLR FUEL M131A5C	S72983	15,064	2	2	2	2	0
STLR LB 22-1/2T M871	S70027	26,500	1,179	1,201	1,282	1,305	1,709
STLR TANK FUEL M967	S10059	77,550	654	654	654	654	1,500
STLR TNK 7500 G M1062	S73119	27,774	319	319	319	319	540
STLR TNK FUEL M969	S73372	97,413	531	608	685	762	564
STLR VAN CGO M128A1C	S74079	7,111	13	13	13	13	3
STLR VAN ELCT M373A2	S74353	24,125	19	19	19	19	0
STLR VAN SUP M129A1C	S75175	84,466	416	416	416	416	374
TK TR CBT W/O W M1977	T91308	226,150	280	280	280	280	392
TLR BOL G/P 4T M796	W94536	9,618	455	456	456	456	486
TLR CGO 3/4TON M101	W95537	3,894	2,018	2,021	2,021	2,021	823
TRAILER FB M989	T45465	34,714	57	57	57	57	80
TRCTR FT CAT D7F DV29	W76816	205,000	250	250	250	250	293
TRCTR FT CAT D7F DV29	W83529	245,275	257	257	257	257	255
TRCTR FT CAT D8K-8S-8	W88699	197,322	21	21	21	21	0
TRK CGO 2 1/2T M1081	T41995	101,742	7	7	7	7	21
TRK CGO 4X4 M1078	T60081	176,428	740	846	958	974	2,312
TRK CGO 4X4 W/W M1078	T60149	115,639	147	165	165	166	628
TRK CGO MTV LWB M1085	T61704	118,791	1	1	1	1	6
TRK CGO PLS M1074	T41067	288,015	126	128	129	129	0
TRK CGO PLS M1075	T40999	276,410	488	502	504	509	1,023

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TRK CGO TACT, M985	T39586	272,033	56	58	58	60	84
TRK CGO TACT, M977	T59278	251,388	67	67	67	67	45
TRK CGO TACT W/W, M977	T39518	260,574	20	20	20	20	4
TRK DMP MTV W/E M1090	T64911	141,557	32	37	37	37	433
TRK FS 21/2T M49A2C	X57271	98,162	4	4	4	4	0
TRK TCTR HET M911	T61035	75,416	2	13	13	15	20
TRK TK FS M978	T87243	268,440	163	165	172	172	312
TRK TK FS M978 W/W	T58161	278,409	102	102	102	105	43
TRK TRAC M878	T60353	62,000	34	42	49	63	162
TRK TRAC M915	T61103	162,968	1,996	2,041	2,081	2,130	2,426
TRK TRAC M916	T91656	164,760	550	556	559	561	694
TRK TRAC M920	T61171	74,288	246	246	246	246	72
TRK TRACTOR HET M1070	T59048	256,704	336	336	336	369	435
TRK TRCTR MTV M1088	T61239	142,132	277	298	440	531	2,038
TRK UTIL 10000 M1097	T07679	61,665	767	1,291	1,583	1,830	519
TRK UTIL 1-1/4T M1025	T92242	74,969	1,326	1,326	1,326	1,360	337
TRK UTIL 1-1/4T M1038	T61562	36,672	293	293	293	293	412
TRK UTIL 1-1/4T M998	T61494	36,076	8,739	8,885	8,885	8,886	14,757
TRK UTIL SHELTR M1037	T07543	36,932	492	507	613	613	464
TRK VAN W/E M1079	T93484	162,060	29	29	35	35	147
TRK WKR MTV W/W M1089	T94709	331,680	44	44	44	44	175
TRK WRK M984 W/W	T63093	379,000	306	312	312	318	415
TRUCK CARGO: MTV W/E	T61908	128,076	348	483	540	540	1,657
<b>TACTICAL COMBAT VEHICLES</b>							
BRDG ERCT SE BAILEY	C22058	43,944	3	3	3	3	0
BRDG ERCT SE FB UK	C22126	488,354	5	5	5	5	14
BRDG FIX BAILEY	C23017	303,673	2	2	2	2	0
BRDG FIX HW AL 100 FT	C22811	964,515	10	10	10	10	28
<b>TEST EQUIPMENT</b>							
TEST SET AN/GRM-114	T87468	11,822	161	161	161	161	152
TEST SET ELECTR SYSTS	T52849	561,312	8	8	8	8	0
<b>WEAPONS</b>							
MACH GUN 5.56MM M249	M09009	2,653	8,746	8,776	8,837	8,837	9,897
MG GRENAD MK19 MODIII	M92362	15,320	1,677	1,681	1,700	1,700	2,445
M240B MACHINE GUN	M92841	6,000	133	133	133	133	0
RIFLE 5.56MM M16A2	R95035	449	102,098	102,121	102,142	102,142	125,369

**USAR**

Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
RIFLE M16A4	R97175	587	1,488	1,488	1,488	1,488	0
M4 CARBINE	R97234	587	5,719	5,719	5,719	5,719	0
<b>WATER EQUIPMENT</b>							
DIST WTR TNK WD6S	D28318	30,289	57	57	57	57	130
FORWARD AREA WATER POI	F42612	19,484	75	77	77	77	102
TACTICAL WATER DISTRIB	T09094	660,000	30	30	30	30	34
TANK ASY WTR 3000 GAL	T19033	2,377	1,480	1,496	1,512	1,512	2,232
TANK FAB WTR 3000 GAL	V15018	1,762	17	17	17	17	39
TANK LIQ DISP TRLR MT	V19950	2,000	408	409	409	409	1,022
WATER STORAGE/DISTRIBU	W37311	200,508	18	18	18	18	22
WTR PURIF 3000GPH TM	W47225	748,000	101	101	101	101	147

**USAR**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

Nomenclature	Equip No.	Average Age	Remarks
<b>AIRCRAFT</b>			
HELICOPTER, BLACKHAWK UH60-L	H32361	1	
HELICOPTER,ADVANCED ATTACK AH-64A	H28647	12	
HELICOPTER,CARGO TRANSPORT CH47-D	H30517	14	
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>			
GENERATOR, SMOKE, MECH PULSE	J30492	29	
<b>CONSTRUCTION EQUIPMENT</b>			
CRANE TRK MOUNTED: HYD 25T CAT (CCE)	F43429	27	
CRANE, WHEEL MOUNTED, 7 1/2 T	C36151	13	
CRANE, WHEEL MOUNTED, HYDRAULIC 25T (ATEC)	C36586	4	
CRANE, WHEEL MOUNTED, ROUGH TERRAIN	C39398	12	
LOADER, SCOOP, 2.5CY	L76556	17	
LOADER, SCOOP,5CY	L76321	24	
MIXING PLANT ASPHALT	M57048	7	
RAMP LOADING VEHICLE, 16K LB	R11154	13	
ROLLER PNEUMATIC, VAR PRESSURE	S11793	24	
ROLLER, TOWED, VIBRATING, 5T	S10682	17	
ROLLER, VIBRATORY, SP, HIGH IMPACT	S12916	24	
SCRAPER, EARTH MOVING	S56246	17	
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>			
FLOODLIGHT SET TRAILER MOUNTED	F79334	18	
LAUNDRY UNIT, TRAILER MOUNTED	L48315	34	
<b>GENERATORS</b>			
GENERATOR PWR, 15KW,60HZ,TRLR MTD	G53778	7	
GENERATOR SET,DIESEL ENGINE,30KW	J36383	19	
<b>MATERIEL HANDLING EQUIPMENT</b>			
ROUGH TERRAIN CARGO HANDLER (RTCH) 50K LB	T48941	17	
<b>REPAIR EQUIPMENT</b>			
INST REP SHOP M185A3	K90188	31	
<b>TACTICAL VEHICLES</b>			
TRK BOLSTER 5T 6X6 WWN	X39187	32	
TRK CGO 1 1/4T M1008 CUCV	T59482	17	
TRK CGO 1 1/4T M1028 CUCV	T59414	17	

**USAR**  
**Average Age of Equipment**

Table 2

Nomenclature	Equip No.	Average Age	Remarks
TRK CGO 2 1/2T 6X6 W/E	X40009	8	
TRK CGO 2 1/2T 6X6 WVN	X40146	7	
TRK CGO 2-1/2T M35A2C	X40077	7	
TRK CGO 2-1/2T M36A2	X40283	6	
TRK CGO 5T 6X6 LWB W/E	X40831	33	
TRK CGO 5T 6X6 LWB WVN	X40968	34	
TRK CGO 5T 6X6 XLWB WE	X41105	16	
TRK CGO 5T 6X6 XLWB WN	X41242	33	
TRK CGO DROP SIDE 5T	X40794	14	
TRK CGO DROP SIDE WVN	X40931	16	
TRK CGO M35A2C WW	X40214	7	
TRK CGO M36A2 WW	X40420	7	
TRK CGO TACT 1 1/4T CUCV	T59346	18	
TRK CGO TACT W/LT CRANE HEMTT M977	T59278	15	
TRK DUMP 20T DD 12 CY	X44403	25	
TRK DUMP 5T 6X6 W/E	X43708	19	
TRK DUMP 5T 6X6 WVN WE	X43845	29	
TRK TANK FUEL 2500G	T87243	13	
TRK TANK FUEL 2500G WW	T58161	12	
TRK TANK FUEL M49A2C	X57271	30	
TRK TCTR HET M911	T61035	24	
TRK TRAC 5T 6X6 W/E	X59326	22	
TRK TRAC 5T 6X6 WVN WE	X59463	24	
TRK TRAC 5T YARD 4X2	T60353	22	
TRK TRAC 66000 M916	T91656	11	
TRK TRAC 6X4 M915	T61103	21	
TRK TRAC MET 8X6 75000	T61171	23	
TRK TRAC WKR 5T WVN WE	X60696	32	
TRK UTIL 1 1/4 4X4 WE M998 CGO/TROOP CARRIER	T61494	12	
TRK UTIL 1 1/4 4X4 WW M1038 CGO/TRP CARRIER	T61562	14	
TRK UTIL 1 1/4T M1025 HMMWV ARMAMENT CARR	T92242	13	
TRK UTIL 1 1/4T M1026 HMMWV ARMNT CARR W/W	T92310	13	
TRK UTIL 1/4T 4X4 W/E	X60833	29	
TRK VAN EXP 5T 6X6	X62237	17	
TRK VAN SHOP 2 1/2T WE	X62340	34	
TRK VAN SHOP M109A3 WW	X62477	18	

**USAR**  
**Average Age of Equipment**

Table 2

Nomenclature	Equip No.	Average Age	Remarks
TRK WATER 1000G M50A3	X58367	32	
TRK WKR TACT 8X8 HVY EXP MOB TACT TRUCK	T63093	11	
TRK WRECKER 5T	X63299	24	
TRLR PALLET LOAD 8X20	T93761	7	
TRUCK TRACTOR (HET)	T59048	9	
TRUCK TRACTOR 2-1/2 T	X59052	35	
TRUCK VAN LMTV W/E	T93484	2	
TRUCK WRECKER MTV W/E	T94709	2	
TRUCK, FORK LIFT, 6K LB	T49096	14	
TRUCK, FORK LIFT, 6K LB,RT,VAR REACH	T48944	11	
TRUCK, FORK LIFT,DSL DRVN,10K LB,48 IN	T49119	20	
TRUCK, FORK LIFT,DSL DRVN,4K LB,RT	T49225	19	
SEMITRAILER TANK PETRO	S73119	12	
SEMITRAILER, 22 1/2T M871	S70027	9	
SEMITRAILER, FUEL SVC, 5K GAL	S72983	35	
SEMITRAILER, VAN SUP M129A2C	S75175	13	
SEMITRAILER, VAN, CGO M128A2C	S74079	34	
SEMITRAILER, VAN, RPR STOR,6T	S74832	30	
STLR LB HVY EQUIP 60T	S70661	26	
TRAILER, FLATBED,11T,4 WH (HEMAT)	T45465	9	
TRK AMB 2 LITTER ARMD	T38707	17	
TRK AMB 4 LITTER ARMD	T38844	14	
TRK CGO HVY W/MHE W/E	T41067	9	
TRK CGO HVY XPORTER	T40999	8	
TRK CGO TACT W/MED CRN	T39586	14	
TRK CGO TACT W/W-LT CR	T39518	15	
TRK UTIL SHLTR CARR WE	T07543	12	
TRK UTIL TACT 3/4T W/E	T05028	17	
TRK UTIL TOW CARR ARMD	T05096	16	
TRUCK UTILITY HMMWV	T07679	7	
<b>TRACKED COMBAT VEHICLES</b>			
RECOVERY VEHICLE, MDM M88A1	R50681	27	
SEMITRAILER, TANK, 5K GAL M967	S10059	16	
<b>WATER EQUIPMENT</b>			
DISTRIBUTOR, WATER TANK, 6000 GAL, TRLR MTD	D28318	17	

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Table 3

**Service Procurement Program - Reserve (P-1R)**

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All cost values are in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>MODIFICATION OF AIRCRAFT</b>				
CH-47 CARGO HELICOPTER MODS	41,000,000	98,600,000	64,600,000	
UTILITY/CARGO AIRPLANE MODS			1,896,000	
AIRBORNE AVIONICS			2,183,000	
GATM ROLLUP	1,255,000			
<b>WEAPONS AND OTHER COMBAT VEHICLES</b>				
ARMOR MACHINE GUN, 7.62MM M240 SERIES	1,233,000			
XM107, CAL. 50, SNIPER RIFLE	44,000			
5.56 CARBINE M4	2,660,000	2,974,000	89,000	
<b>TACTICAL AND SUPPORT VEHICLES</b>				
SEMITRAILERS, TANKERS		7,820,000	1,491,000	
HI MOB MULTI-PURP WHLD VEH (HMMWV)	20,032,000	25,478,000	23,054,000	
FAMILY OF MEDIUM TACTICAL VEH (FMTV)	198,832,000	192,861,000	204,140,000	
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIPMEN		2,293,000		
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	266,000	6,507,000	21,186,000	
TRUCK, TRACTOR, LINE HAUL, M915/M916	1,787,000	11,895,000	15,431,000	
HVY EXPANDED MOBILE TACTICAL TRUCK EXT SERV P		17,122,000	16,821,000	
<b>COMMUNICATIONS AND ELECTRONICS EQUIPMENT</b>				
NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE)	106,000	44,000	150,000	
ACUS MOD PROGRAM		4,774,000		
COMMS-ELEC EQUIP FIELDING	45,000	35,000	40,000	
MEDICAL COMM FOR CBT CASUALTY CARE (MC4)	1,162,000		11,879,000	
TSEC - ARMY KEY MGT SYS (AKMS)	90,000	105,000	110,000	
NIGHT VISION, THERMAL WPN SIGHT	1,361,000			
JOINT NETWORK MANAGEMENT SYSTEM (JNMS)	1,060,000	442,000	856,000	
<b>OTHER SUPPORT EQUIPMENT</b>				
TACTICAL BRIDGING	19,050,000	3,680,000	28,730,000	
TACTICAL BRIDGE, FLOAT-RIBBON	790,000	4,846,000	3,200,000	
LIGHTWEIGHT MAINTENANCE ENCLOSURE (LME)	20,000			
FIELD FEEDING EQUIPMENT	169,000			
ITEMS LESS THAN \$5.0M (ENG SPT EQ)	76,000	18,000		

**USAR**

Table 3

**Service Procurement Program - Reserve (P-1R)**

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
DISTRIBUTION SYSTEMS, PETROLEUM & WATER		45,000		
COMBAT SUPPORT MEDICAL	1,944,000	174,000	419,000	
SHOP EQ CONTACT MAINTENANCE TRK MTD (MYP)	1,779,000	1,388,000	1,028,000	
WELDING SHOP, TRAILER MTD			1,142,000	
LOADERS	528,000			
GENERATORS AND ASSOCIATED EQUIP	7,176,000	10,147,000	9,490,000	
ALL TERRAIN LIFTING ARMY SYSTEM			10,679,000	
MODIFICATION OF IN-SVC EQUIPMENT (OPA-3)	20,000			
<b>TOTAL</b>	<b>\$302,485,000</b>	<b>\$391,248,000</b>	<b>\$418,614,000</b>	

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
TRAILER BREAKBULK 22.5T M871A3	1,612,000			
HIGH MOBILITY TRAILER REUTILIZATION	3,585,000			
ENGINEER INFLATABLE BOAT	1,667,500			
ENGINEER OUTBOARD MOTOR	116,780			
FUEL SYSTEM SUPPLY POINT 60K GPH	1,064,054			
LASER MARKSMANSHIP TRAINING SYSTEM	5,761,333			
UH-60 BLACKHAWK	86,761,333			
FORWARD AREA REFUELING EQUIPMENT	490,000			
HMMWV	1,226,000			
UPARMORED HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE		3,582,140		
TOPHANDLERS 20 FT		840,000		
REFRIGERATED CONTAINER SYSTEM		3,080,000		
HIGH MOBILITY TRAILERS		1,511,760		
TRUCK TRACTOR YARD TYPE 5 TON		930,000		
FAMILY OF LIGHT MEDIUM TACTICAL VEHICLES			6,804,000	
FAMILY OF MEDIUM TACTICAL VEHICLES			7,016,009	
MOVEMENT TRACKING SYSTEM			2,424,000	
ROUGH TERRAIN CARGO HANDLER			4,950,000	
M4 CARBINE RIFLE			1,815,000	
PHOENIX TERMINAL			4,000,000	
NIGHT VISION IMAGE INTENSIFICATION SYSTEMS			1,789,635	
TRUCK TRACTOR LINE HAUL M915A3			10,557,000	
DATA PACKAGES FOR C4E			4,885,656	
NEAR VERTICAL INCIDENCE SKYWAVE ANTENNA FOR IHFR			424,800	
<b>TOTAL</b>	<b>\$102,284,000</b>	<b>\$9,943,900</b>	<b>\$44,666,100</b>	

### 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 Active 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 2005 Qty	FY 2006 Qty	FY 2007 Qty	Remarks
<b>CHEM BIO EQUIPMENT</b>					
DECONTAMINATING APPARATUS	D82404	96	5	11	
MONITOR CHEMICAL AGENT	C05701	164			
<b>COMBAT COMMUNICATIONS</b>					
HF RADIO SET: AN/GRC-1	H35404	73	8		
LTWT DIG FAC AN/UXC-7	L67964	82	28	24	
MOBILE SUBS AN/VRC-97	T55957	126	5		
RADIAC SET AN/PDR-75	R30925	83	14	3	
RADIO SET: AN/GRC-213	R30895	1	1		
<b>CONSTRUCTION EQUIPMENT</b>					
TRCTR WHLD EXCAV	T34437	38	3		
<b>GENERATORS</b>					
GEN ST DSL MEP-802A	G11966	181	38		
GEN ST DSL MEP-803A	G74711	105	1	46	
GENERATOR SET DIESEL E	G35851	2	3	1	
POWER PLANT: ELECTRIC	P42194	5			
<b>MEDICAL EQUIPMENT</b>					
ANESTHESIA APP 4 CYL	A62773		5		
DEFIBRILLATOR CARDIOS	D86072	6	6		
MMS CENTRAL MATERIAL	M08417	1	1		
MMS INTER CARE WARD	M08599	2	5		
MMS OPERATING ROOM	M72936	1	1		
MMS POST-OP/ICU DEP	M09576	1	4		
MMS X-RAY MOB DEP	M86675		1		
<b>OTHER PROCUREMENT</b>					
CENTRAL OFFICE COMMS	C41311	2			
DIG D GEN SG-1139/G	D37041	8	4		
MELIOS LASER AN/PVS-6	M74849	1	1		
MG GRENAD MK19 MODIII	M92362	672	4	19	
<b>PETROLEUM EQUIPMENT</b>					
FILT SEP DL13217E9320	H52087	49			

**USAR**

Table 5

**Projected Equipment Transfer/Withdrawal Quantities**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Qty</b>	<b>FY 2006 Qty</b>	<b>FY 2007 Qty</b>	<b>Remarks</b>
PROCESS MACH 7GL TANK	P98514		2		
TANK ASY PTR 10000GAL	V12552	5			
TEST KIT PETROLEUM AV	T05741	3			
<b>REPAIR EQUIPMENT</b>					
WELDING SHOP TRAILER M	W48391	70	5		
<b>TACTICAL VEHICLES</b>					
STLR FB 34T M872	S70159	261	1	29	
STLR TNK FUEL M969	S73372	106	15	2	
TLR BOL G/P 4T M796	W94536	59	1		
TRK LFT FK VAR RCH RT	T73347	23			
TRK UTIL 1-1/4T M1038	T61562	9	6		
TRK UTIL 1-1/4T M998	T61494	620	146		
TRK WRK M984 W/W	T63093	16	6		
<b>WATER EQUIPMENT</b>					
FORWARD AREA WATER POINT	F42612	15	2		

**USAR**

Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
<b>AIRCRAFT</b>							
UTILITY/CARGO AIRPLANE MODS				1,600,000	3,400,000		
CH-47, CARGO, HELICOPTER						500,000	376,700
<b>CHEM BIO EQUIPMENT</b>							
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	59	59				
DECONTAMINATING APPARATUS,LIGHT WEIGHT M17	D82404	16	16				
MASK,CHEMICAL BIOLOGICAL M40	M12418	1,300	513				
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	644	0				
RADIACMETER IM-93/UD	Q20935	173	52				
RADIAC SET AN/PDR-75	R30925	18	18				
<b>CONSTRUCTION EQUIPMENT</b>							
HYDRAULIC EXCAVATOR				2,600,000	7,142,000		
DEPLOYABLE UNIVERSAL COMBAT EARTH MOVERS				11,800,000	18,583,000		
CRANES				2,500,000	4,345,000		
DETECTING SET,MINE AN/PSS-12	G02341	40	40				
SCOOP LOADERS				0	885,000		
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>							
SANITATION CENTER,FOOD	S33399	29	29				
LAUNDRIES, SHOWERS AND LATRINES				4,700,000	4,659,000		
WELDER SHOP,TRAILOR MOUNTED	W48391	4	4				
TRAILER,CARGO,3/4T M101A1	W95537	4	4				
TRAILER BREAKBULK, 22.5T, M871A3	S70027						1,488,000
GENERATORS AND ASSOCIATED EQUIP	MULTI-LIN			2,300,000	2,313,000		
<b>ELECTRONICS, NON-TACTICAL</b>							
AUTOMATED DATA PROCESSING EQUIP				2,400,000	2,373,000		
RESERVE COMPONENT AUTOMATION SYS (RCAS)				34,500,000	39,161,000		
TSEC - ARMY KEY MGT SYS (AKMS)				300,000	300,000		
LOGTECH				800,000	803,000		
STAMIS TACTICAL COMPUTERS (STACOMP)				7,500,000	7,540,000		

**USAR**

Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
<b>ELECTRONICS, TACTICAL</b>							
MANEUVER CONTROL SYSTEM				0	260,000		
ELECTRONIC KEYING DEVICE KYK-13/TSEC	E98103	15	15				
LIGHTWEIGHT DIGITAL FACSIMILE AN/UXC-7	L67964	48	12				
NET CONTROL DEVICE,KYX-15/TSEC	N02758	12	12				
MOBILE SUBSCRIBER AN/VRC-97 (MSRT)	T55957	40	10				
RADIO SET,HF AN/GRC-193A	H35404	8	0				
RADIO SET AN/VRC-89A (SINGGARS)	R44863	45	0				
RADIO SET AN/VRC-92A (SINGGARS)	R45407	23	0				
RADIO SET AN/VRC-87A (SINGGARS)	R67160	60	0				
RADIO SET AN/VRC-88A (SINGGARS)	R67194	13	0				
RADIO SET AN/VRC-90A (SINGGARS)	R67908	412	0				
RADIO SET AN/VRC-91A (SINGGARS)	R68010	32	0				
RADIO SET AN/VRC-119A (SINGGARS)	R83005	12	0				
POWER SUPPLY PP-6224/U	P40750	24	0				
<b>MEDICAL EQUIPMENT</b>							
MEDICAL EQUIPMENT SET SICK CALL FIELD	M30156	8	0				
MEDICAL EQUIPMENT SET TRAUMA FIELD	M30499	8	0				
MINI EYESAFE LASER INFRARED OBS SET AN/PVS-6	M74849	9	0				
COMBAT SUPPORT MEDICAL				8,000,000	1,000,000		
<b>MATERIEL HANDLING EQUIPMENT</b>							
ALL TERRAIN LIFTING ARMY SYSTEM	C36586			7,300,000	7,287,000		
<b>OTHER PROCUREMENT</b>							
NIGHT VISION SIGHT AN/PVS-4	N04732	27	0				
NIGHT VISION GOGGLES AN/PVS-7B	N05482	747	0				
NIGHT VISION SIGHT AN/TAS-5	N23721	14	0				
<b>PETROLEUM EQUIPMENT</b>							
TANK,LIQUID DISPENSING,TRAILER MOUNTED	V19950	4	4				
SEMITRAILER, TANK, 7500G, BULKHAUL				16,000,000	0		
DISTRIBUTION SYSTEMS, PETROLEUM & WATER				3,300,000	3,230,000		
WATER PURIFICATION SYSTEMS				3,700,000	3,735,000		
RAIL & FLOAT EQUIPMENT							
LOGISTICS SUPPORT VESSEL (ESP)				6,100,000	6,097,000		

**USAR**

Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
<b>TACTICAL VEHICLES</b>							
HI MOB MULTI-PURP WHLD VEH (HMMWV)				5,300,000	0		
FAMILY OF MEDIUM TACTICAL VEHICLES (FMTV)				33,800,000	33,547,000		
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)				6,200,000	6,229,000		
FIRETRUCKS & FIREFIGHTING EQUIPMENT				0	1,055,000		
TRUCK, TRACTOR, LINE HAUL, M915/M916				3,400,000	3,439,000		
TRUCK,UTILITY,1-1/4 TON, M998, WE (HMMWV)	T61494	253	120				
TRUCK,WRECKER,M948E1, 8X8 (HEMTT)	T63093	3	3				
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	3	0				
TRUCK,CARGO,5T,DROP SIDE M923	X40794	2	2				
HMMWV M1097						4,496,500	3,100,300
<b>TRACKED COMBAT VEHICLES</b>							
ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD)				1,700,000	0		
<b>TEST EQUIPMENT</b>							
QUALITY SURVEILLANCE EQUIPMENT				200,000	110,000		
TEST EQUIPMENT MODERNIZATION (TEMOD)				2,600,000	2,627,000		
<b>WEAPONS</b>							
M16A4 RIFLE				1,000,000	0		
MACHINE GUN,5.56MM M249 (SAW)	M09009	345	60				
RIFLE,5.56 MM M16A2	R95035	1,200	1,200				
GRENADE LAUNCHER, AUTO, 40MM, MK19-3				4,600,000	0		
<b>TOTAL</b>				<b>\$174,200,000</b>	<b>\$160,120,000</b>	<b>\$4,996,500</b>	<b>\$4,965,000</b>

**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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
<b>AIRCRAFT</b>						
AIRPLANE CARGO-TRAN	A30062	APL CGO TRS C-12D	A29812	16	X	
AIRPLANE CARGO-TRAN	A30062	LOCAL-ASSIGNED LIN	LOCALA	10	X	
CARR SMOKE GEN M1059	C12815	MECH SMOKE OBSCUR M58	G87229	21	X	
<b>CHEM/BIO EQUIPMENT</b>						
GENSMOKE MECH M56	G58151	GEN ST SMOKE GN: M157	G51840	24	X	
MASK CHEM BIO M43A1 LG N	M18594	MASK PROT ACFT M24 M	M11621	6	X	
MASK CHEM BIO M45 XSMALL	M12736	MASK PROT ACFT M24 M	M11621	291	X	
MASK CHEM BIO AA M48 SMALL	M13515	MASK PROT ACFT M24 M	MULTI-LIN	89	X	
MASK CHEM BIO C V M42 SM	M18526	MASK: PROTECTIVE TANK	MULTI-LIN	6	X	
MASK CHEM BIO M40 SM	M12418	MASK FLD ABC-M17A1 S	M11895	1,758	X	
MASK CHEM BIO M40 SM	M12418	MASK CH BI C V M42 SM	M18526	94	X	
MASK CHEM BIO M43 SM	M12350	MASK PROT ACFT M24 M	M11621	3	X	
MOUNTING KIT F/M548A1	M18293	MTG KT MI DIS GR M139	M17999	6	X	
MTG KT SM GEN M284	M17931	MTG KT SM GEN M288	M78620	72	X	
<b>COMBAT COMMUNICATIONS</b>						
CTR REC C-11561(C)/U	C05541	RADIO SET: AN/VRC-47	Q54174	874	X	
D T D ANCYZ-10 V2	D78555	CHGR RADET PP-1578/PD	MULTI-LIN	1,662	X	
DIG NS TRM TA-1042A/U	D60801	DNVT TA-954/TT	D40533	101	X	
HF RADIO SET: AN/GRC-1	H35404	LOCAL-ASSIGNED LIN	MULTI-LIN	223	X	
OPS CENTER COMM	N20115	OPER CEN AN/MS-32 LP	N20663	4	X	
RADIO SET AN/PRC-119D	R83073	RADIO SET AN/PRC-119F	R83141	32	X	
RADIO SET AN/VRC-88D	R67262	RADIO ST AN/VRC-88A	R67194	9	X	
RADIO SET AN/VRC-89D	R44931	RADIO ST AN/VRC-89A	MULTI-LIN	210	X	
RADIO SET AN/VRC-90D	R67976	RADIO ST AN/VRC-89A	MULTI-LIN	132	X	
RADIO SET AN/VRC-91D	R68078	RADIO SET: AN/VRC-91A	R44999	321	X	
RADIO SET AN/VRC-92D	R45475	RADIO SET: AN/VRC-92A	MULTI-LIN	52	X	
RADIO SET: AN/GRC-213	R30895	LOCAL-ASSIGNED LIN	LOCALA	50	X	
RADIO SET: AN/VRC-90A	R67908	RADIO SET: AN/GRC-106	MULTI-LIN	958	X	
RADIO SET: AN/VRC-91A	R68010	RADIO SET AN/GRC & VRC	MULTI-LIN	103	X	
RADIO SET: AN/VRC-92A	R45407	RADIO SET: AN/VRC-46	MULTI-LIN	71	X	
RADIO ST AN/PRC-119A	R83005	RADIO SET AN/PRC-25	Q38299	78	X	

**Major Item of Equipment Substitution List**

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
RADIO ST AN/PRC-126	R55336	LOCAL-ASSIGNED LIN	MULTI-LIN	110	X	
RADIO ST AN/VRC-87A	R67160	RADIO SET: AN/VRC-46	MULTI-LIN	59	X	
RADIO ST AN/VRC-88A	R67194	RADIO SET AN/GRC-125	MULTI-LIN	190	X	
RADIO ST AN/VRC-89A	R44863	RADIO SET: AN/VRC-12	MULTI-LIN	140	X	
RDO TS ST AN/GRM-114B	R36178	GEN SIG AN/URM-103	MULTI-LIN	23	X	
RT-1476A/ARC-201AV	R40255	LOCAL-ASSIGNED LIN	LOCALA	17	X	
TAPE READ KOI-18/TSEC	T40405	D T D ANCYZ-10 V2	D78555	4	X	
<b>CONSTRUCTION EQUIPMENT</b>						
CRANE WHL M320RT	F39378	CRANE WHL MTD	MULT-LIN	19	X	
CRANE WHL MTD	C39398	CRNE TRK 25T MT 250	F43429	7	X	
CRANE: WHEEL MTD H	C36586	CRANE WHL MTD	C36151	10	X	
<b>COMBAT SERVICE SUPPORT</b>						
BATH UT SH-63LP	B43663	LOCAL-ASSIGNED LIN	LOCALA	70	X	
FLOODLIGHT ST TLR MTD	F79334	FLOODLIGHT 6 LIGHTS	H79221	274	X	
PARACHUTE CARGO: 64FT	P66486	PARACHUTE CARGO: 64 FT	N66418	36	X	
<b>GENERATORS</b>						
DIST SYS ELEC 40 AMP	F55485	FEEDER SYS ELECT	MULTI-LIN	57	X	
FLUXMTR TS-15C/AP	M37855	LOCAL-ASSIGNED LIN	LOCALA	2	X	
GEN SET DED MEP 831	G18358	GEN ST DSL MEP-802A	MULTI-LIN	509	X	
GEN SET DED TM: 5KW 60	G42238	GEN ST DSL ENG TM: 5KW	G37273	28	X	
GEN ST DSL MEP-016B	G54041	GEN ST DSL ENG TM: 5KW	MULTI-LIN	21	X	
GEN ST DSL MEP-802A	G11966	GEN ST DSL ENG TM: 5KW	MULTI-LIN	656	X	
GEN ST DSL MEP-803A	G74711	GENERATOR SET DIESEL & GAS	MULTI-LIN	387	X	
GENERATOR SET DIESEL E	G35851	GEN ST DSL MEP 805A	MULTI-LIN	34	X	
GENERATOR SET DIESEL E	G53778	GEN ST DSL MEP-802A	MULTI-LIN	107	X	
GENERATOR SET: DIESEL	G78306	GEN SET MEP MOD 501-A	MULTI-LIN	51	X	
POWER PLANT: ELECTRIC	P42126	POWER PLANT ELEC TM: 3	MULTI-LIN	8	X	
PWR SUPPLY PP-6224/U	P40750	PWR SUPPLY PP-2953/U	MULTI-LIN	218	X	
<b>MEDICAL EQUIPMENT</b>						
AIR COND AC 36M	A24900	AIR COND 13216E5910	A23828	35	X	
MMS CENTRAL MATERIAL	M08417	LOCAL-ASSIGNED LIN	LOCALA	4	X	
MMS INTER CARE WARD	M08599	LOCAL-ASSIGNED LIN	LOCALA	110	X	
MMS LAB GEN MF2K/M	M73425	LOCAL-ASSIGNED LIN	LOCALA	15	X	
MMS MED MAIN AUG ARMY	M09349	LOCAL-ASSIGNED LIN	LOCALA	4	X	
MMS OPERATING ROOM	M72936	LOCAL-ASSIGNED LIN	LOCALA	69	X	

## Major Item of Equipment Substitution List

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
MMS POST-OP/ICU DEP	M09576	LOCAL-ASSIGNED LIN	LOCALA	282	X	
MMS X-RAY DEPMEDS:	M72300	LOCAL-ASSIGNED LIN	LOCALA	2	X	
MONITOR-RECORDER ECG	M79195	VITAL SIGNS MONITOR	Z97117	20	X	
OPERATING & TRMT UNIT	P19377	CHAIR&STOOL UNIT DENT	MULTI-LIN	292	X	
X-RAY APP DEN	X38819	X-RAY APP FLD DENTAL	X37050	103	X	
<b>MATERIAL HANDLING EQUIPMENT</b>						
CONTAINER ASSY REF	C84541	LOCAL-ASSIGNED LIN	LOCALA	6	X	
SPREADER LIFT FRT CON	U12203	SPREADER LIFT ISO CON	U12204	2	X	
SPREADER LIFT ISO CON	U12204	LOCAL-ASSIGNED LIN	LOCALA	1	X	
TOPHNDLR 20 FT	T67595	CRANE WHL MTD	C36151	4	X	
TOPHNDLR 40 FT	T67731	TRK LF DD IHC M-10A	T49119	2	X	
TRK LF CBD 4000 LB	T73645	TRUCK LIFT FORK: DSL D	T49255	3	X	
TRK LFT FK VAR RCH RT	T73347	LOCAL-ASSIGNED LIN	LOCALA	189	X	
<b>OTHER PROCUREMENT</b>						
NIGHT VIS G AN/PVS-7B	N05482	NIGHT VIS GL AN/PVS-5	N04456	3,504	X	
<b>PETROLEUM EQUIPMENT</b>						
HOSELINE OUTFIT 4 IN	K54707	LOCAL-ASSIGNED LIN	LOCALA	16	X	
REFUEL SYS AVIA HEMTT	R66273	LOCAL-ASSIGNED LIN	LOCALA	10	X	
TANK ASSY 20000 PETRO	T12620	LOCAL-ASSIGNED LIN	LOCALA	345	X	
TANK ASY PTR 10000GAL	V12552	LOCAL-ASSIGNED LIN	LOCALA	375	X	
TANK FAB COL 50000 GL	V15325	LOCAL-ASSIGNED LIN	LOCALA	70	X	
TANK FAB PTR 3000 GAL	V15086	TANK ASY PTR 10000GAL	V12552	4	X	
TANK LIQ DISP TRLR MT	V19950	TK-PUMP UNIT MDL 1800	V12141	1	X	
TANK LIQ DISP TRLR MT	V19950	TANK LIQUID STORAGE ME	V15566	2	X	
<b>REPAIR EQUIPMENT</b>						
SHOP EQUIP GEN PURP	T10549	LOCAL-ASSIGNED LIN	MULTI-LIN	7	X	
SHOP EQUIP GEN PURP	T10549	S/E MACH SP FM BASIC	T15644	2	X	
SHOP EQUIP WOODWORK	T16988	LOCAL-ASSIGNED LIN	LOCALA	26	X	
SHOP EQUIP CON MA	S25681	LOCAL-ASSIGNED LIN	MULTI-LIN	36	X	
SHP EQ GE PU TR M EOD	S31232	SHP EQ G P TR MT: ORD	S30982	3	X	
<b>RAIL &amp; FLOAT EQUIPMENT</b>						
LANDING CRAFT MECH	L36739	LOCAL-ASSIGNED LIN	LOCALA	3	X	
<b>TACTICAL VEHICLES</b>						
BED CGO PLS M1077A1	B83002	LOCAL-ASSIGNED LIN	LOCALA	10	X	
REC VEH FT HVY M88A2	R50885	REC VEH FT MED M88A1	R50681	6	X	
SEMIT VAN: EXPAN	S74490	LOCAL-ASSIGNED LIN	LOCALA	5	X	

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Table 7

Major Item of Equipment Substitution List

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
SEMIT VAN: REPAI	S74832	LOCAL-ASSIGNED LIN	MULTI-LIN	3	X	
STLR LB 22-1/2T M871	S70027	STLR FB 34T M872	MULTI-LIN	74	X	
STLR LB 25T M172A1	S70517	STLR LB 40T 6WHL M870	S70594	27	X	
STLR TANK FUEL M967	S10059	STLR TNK FUEL M969	MULTI-LIN	4	X	
STLR TNK 7500 G M1062	S73119	STLR TANK FUEL M967	S10059	15	X	
STLR TNK FUEL M969	S73372	STLR TANK FUEL M967	MULTI-LIN	17	X	
STLR VAN SHOP M146	S75038	LOCAL-ASSIGNED LIN	MULTI-LIN	38	X	
STLR VAN SUP M129A1C	S75175	STLR VAN CGO M128A1C	MULTI-LIN	4	X	
TK TR CBT W/O W M1977	T91308	TRANSPORTER BRDGE FLO	X23277	3	X	
TLR CGO HI MOB 11/4T	T95924	TLR CGO 3/4TON M101	W95537	91	X	
TLR FB 5 TON M1061A1	T96883	TLR FB 7 1/2T M1073	T96838	25	X	
TRAILER CARGO: HIGH MO	T95992	LOCAL-ASSIGNED LIN	LOCALA	419	X	
TRCTR FT CAT D7F DV29	W76816	LOCAL-ASSIGNED LIN	LOCALA	22	X	
TRCTR FT CAT D7F DV29	W83529	TRCTR FT CAT D7F DV29	W76816	12	X	
TRCTR FT D5BS	W76268	TRCTR FULL TRKD HI SP	T76541	35	X	
TRK CGO 2 1/2T M35A2	X40009	TRK CGO TACT	T59278	238	X	
TRK CGO 2 1/2T M35A2	X40146	TRK CGO 2 1/2T M35A2	X40009	88	X	
TRK CGO 2 1/2T M36A2	X40420	TRK CGO D/S M35A2C	X40077	6	X	
TRK CGO 5T 6X6 M813	X40831	TRK CGO D/S M35A2C	X40077	92	X	
TRK CGO 5T XLWB M814	X41105	TRK CGO D/S M813A1	X40794	7	X	
TRK CGO D/S M35A2C	X40077	TRK CGO 2 1/2T M35A2	X40009	10	X	
TRK CGO D/S M35A2C WW	X40214	TRK CGO 2 1/2T M35A2	X40009	7	X	
TRK CGO D/S M813A1	X40794	TRK CGO TACT	T59278	181	X	
TRK CGO LWB W/W M813	X40968	TRK CGO D/S M813A1	X40794	4	X	
TRK CGO PLS M1075	T40999	TRK CGO PLS M1074	T41067	126	X	
TRK CGO TACT	T39586	TRK CGO TACT W/W	MULTI-LIN	32	X	
TRK CONCRETE M919	T42725	MXR CON SMITH MDL499A	MULTI-LIN	4	X	
TRK DMP MTV W/E M1090	T64911	TRK DUMP 5T 6X6 M817	X43708	409	X	
TRK DUMP 20T F5070	X44403	TRK DUMP 5T 6X6 M817	X43708	35	X	
TRK DUMP 5T 6X6 M817	X43708	TRK DUMP 5T W/W M817	X43845	22	X	
TRK DUMP 5T W/W M817	X43845	TRK DUMP 5T 6X6 M817	X43708	47	X	
TRK LF DD IHC M-10A	T49119	TRUCK LIFT FORK: DED 6	MULTI-LIN	2	X	
TRK LF DD MDL DV43	T48941	CRANE: WHEEL MOUNTED H	MULTI-LIN	20	X	
TRK MAINT 6X4 M876	T53858	LOCAL-ASSIGNED LIN	LOCALA	28	X	
TRK TRAC M818	X59326	LOCAL-ASSIGNED LIN	LOCALA	290	X	
TRK TRAC M818 W/WN	X59463	TRK TRAC M818	X59326	15	X	

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Table 7

Major Item of Equipment Substitution List

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No
TRK TRAC M878	T60353	TRK TRAC M915	MULTI-LIN	41	X	
TRK TRAC M915	T61103	LOCAL-ASSIGNED LIN	MULTI-LIN	97	X	
TRK TRAC M916	T91656	TRK TRAC M920	T61171	158	X	
TRK TRAC M920	T61171	TRK TRAC M916	T91656	33	X	
TRK UTIL 10000 M1097	T07679	LOCAL-ASSIGNED LIN	MULTI-LIN	180	X	
TRK UTIL 1-1/4T M1026	T92310	TRK UTIL 1-1/4T M1025	T92242	47	X	
TRK UTIL 1-1/4T M1038	T61562	TRK UTIL 3/4T M1009	MULTI-LIN	57	X	
TRK UTIL 1-1/4T M998	T61494	TRK UTIL	MULTI-LIN	1,571	X	
TRK VAN SHOP M109A3	X62340	INST REP SHP M185A3	K90188	10	X	
TRK VAN SHP M109A3 WW	X62477	LOCAL-ASSIGNED LIN	LOCALA	39	X	
TRK WRK M984 W/W	T63093	TRK WKR M816 W/WN	X63299	90	X	
TRUCK CARGO: MTV W/E	T61908	TRK CGO D/S M813A1	X40794	1,270	X	
TRUCK LIFT FORK: DSL D	T49255	TRUCK LIFT FORK: DED 6	MULTI-LIN	64	X	
TRUCK UTIL: EXPANDED	T92446	TRK UTIL 1-1/4T M1025	T92242	265	X	
<b>TEST EQUIPMENT</b>						
TS ST EL SYS AN/PSM95	T92889	ANALYZER (STE/ICEPM)	A56243	11	X	
TS ST EL SYS AN/PSM95	T92889	TEST SE AN/PSM-80(V)2	T77499	5	X	
<b>WEAPONS</b>						
LAUNCHER GRENA M203A1	L46007	LCHR GREN 40MM M203	L44595	889	X	
LMG: 5.56MM M249	M39263	MACH GUN 5.56MM M249	M09009	6	X	
MACH GUN 5.56MM M249	M09009	MG 7.62MM M60	MULTI-LIN	23	X	
MACH GUN 7.62MM M240B	M92841	MG 7.62MM M60	MULTI-LIN	54	X	
MG GRENAD MK19 MODIII	M92362	MACHINE GUN CALIBER .5	MULTI-LIN	10	X	
MNT MAC GUN 40MM MK93	M12647	MT MACH GUN MK64 MOD7	M74823	430	X	
MT MACH GUN MK64 MOD7	M74823	MNT MAC GUN 40MM MK93	M12647	7	X	
RIFLE 5.56 MM M4	R97234	RIFLE 5.56MM M16A1/A2	MULTI-LIN	2,582	X	
RIFLE 5.56MM M16A2	R95035	RIFLE 5.56MM M16A1	R94977	2,650	X	
RIFLE 5.56MM M16A4	R97175	RIFLE 5.56MM M16A2	R95035	555	X	
<b>WATER EQUIPMENT</b>						
DIST WATER NON-SECT	D28736	DIST WTR TNK WD6S	D28318	5	X	
TANK ASSY FABRIC	T19101	LOCAL-ASSIGNED LIN	MULTI-LIN	16	X	
TANK ASY WTR 3000 GAL	T19033	LOCAL-ASSIGNED LIN	MULTI-LIN	149	X	
WTR PURIF 3000GPH TM	W47225	WTR PURIF SET 600 GPH	W35417	3	X	
WTR QTY ANAL SET PUR	W47475	LOCAL-ASSIGNED LIN	LOCALA	99	X	

**Significant Major Item Shortages**

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

PR	Nomenclature	Total Req'd	# Units Short	Unit Cost	Total Shortage Cost	Rationale/Justification
1	JOINT BIOLOGICAL POINT DETECTION SYSTEM (JBPDS)	175	140	1,200,000	168,000,000	Accelerate the fielding of equipment for the Bio-Detection Companies pending activation due to TAA-07. Multi-component BIDS Companies are pending activation in FY 2004 & 2005.
2	FAMILY MEDIUM TACTICAL VEHICLE (FMTV) 2.5 (LMTV) and 5.0 (MTV) TON TRUCKS	13,329	11,166	140,000	1,563,240,000	Fills shortages and improves readiness in company-level combat support (CS) combat service support (CSS) units. Replaces older, maintenance intensive M800 and 900 series vehicles.
3	HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV)	16,624	4,664	65,000	303,160,000	Fills critical shortages and improves readiness in CS/CSS units.
4	UP-ARMORED HIGH MOBILITY MULTI-PURPOSE VEHICLE (M1114) VEHICLE	929	611	179,000	109,369,000	Fills critical shortages in MP and Special Operations units. Provides force protection from small arms fire and land mine blasts.
5	HIGH FREQUENCY (HF) RADIO	1,750	1,344	42,514	57,138,816	HF Radios required for CS/CSS, PO and Special Operations units. Compatible with JTRS.
6	ALL TERRAIN LIFTING ARMY SYSTEM (ATLAS) 10K	946	61	100,199	6,112,139	Fills critical shortages and improves readiness in CSS units.
7	MULT-BAND SUPER HIGH FREQUENCY (SHF) TERMINAL (PHOENIX)	33	33	1,800,000	59,400,000	Provides high capacity, inter and intra theater range extension support for echelon above corps and corps Signal units.
8	MOVEMENT TRACKING SYSTEM (MTS)	10,573	9,865	12,000	118,380,000	Required for units to maintain in-transit visibility and is a requirement for the CATK Corps.
9	TRUCK, ROUGH TERRAIN CONTAINER HANDLER (RTCH) 53K	275	121	525,000	63,525,000	Fills critical shortages and improve readiness in CSS units.
10	NIGHT VISION GOGGLES (NVG) AN/PVS-7D	40,971	23,756	3,100	73,643,600	Fills critical shortages and improves readiness in CS/CSS units. NVGs allow soldiers to operate more effectively and safely at night and degraded battlefield conditions.

## Chapter 3 United States Marine Corps Reserve

### I. Marine Corps Overview

a) Overall Marine Corps-wide Planning Guidance: The objectives of the NMS of the United States are to secure the U.S. homeland, promote security, deter aggression, win the Nation's wars, and ensure military superiority. This strategy requires a joint force that is rapidly deployable anywhere on the globe and capable of sustained, high-intensity operations until the objectives of the nation are met. The United States Marine Corps (USMC) has demonstrated its ability to successfully execute this mission during OEF, OIF, and the GWOT. The USMC remains ready, relevant, and fully capable to project U.S. power abroad in the face of the ever-evolving challenges of the world.

After 227 years of service, the USMC remains the nation's preeminent expeditionary "Total Force in Readiness." Operating in task-organized, combined-arms Marine Air-Ground Task Forces (MAGTF's), the USMC is always on call for critical operations in peacetime and war. Not content with resting on past successes, the USMC continues to dedicate itself to transformation efforts for the twenty-first century. This



transformation is a synthesis of leap-ahead technologies, new operational concepts, business/acquisition reform, and redefined organizations. By focusing on the **Warrior Legacy** and **Naval Heritage** of the USMC, the goal of **Excellence in War-Fighting** will be realized, with the principal contribution being the Nation's forward deployed presence and projection of Naval power "in every corner of the seven seas so that our country and its citizens might enjoy peace and security." Currently

the USMC is concentrating on the transformational qualities of Expeditionary Maneuver Warfare (EMW) and the strength of the Navy-Marine Corps team. This transformation promises to increase the Corps' sea-based capabilities as America's expeditionary force in the years ahead. Due to the unique capabilities of the USMC as a combined-arms force, it is a natural bridge between America's light Special Operations Forces and the heavyweight capability of the Army. As such, the USMC is a true joint force enabler. These capabilities, combined with those of other services, form an integrated array that is complimentary, not competitive, and provide America with the diversity and versatility it needs to confront different threats and environments and to accomplish disparate missions.

Serving as America's sea-based expeditionary combined-arms force, the Navy-Marine Corps team has never been stronger or more necessary for the security of the

nation. Naval forces provide power projection from the sea, uninhibited by host nation demands and free from large, fixed bases. The sea-based capabilities provided by Naval forces are a critical enabler for America's relationships throughout the world. From the sea base, Marines are capable of launching and sustaining a combined-arms force hundreds of miles inland to operate in austere environments. In partnership with the Navy, the Marine Corps is proud of the service it provides the Nation as America's forward deployed and engaged expeditionary force.

b) USMC Equipping Policy: The Expeditionary Force Development System (EFDS) currently in use is crucial to enhanced readiness and efficacy of business practices. The EFDS is an integrated system through which future war fighting capabilities are identified and developed into war-fighting requirements. Once identified, these capabilities are entered into the system, which then validates, prioritizes, resources, implements and transitions the requirements throughout the force to achieve the desired capability. The EFDS produces integrated capabilities based on fundamental concepts, which are supported by interdependent processes for development of Doctrine, Organization, Training, Materiel, Leadership and Education, People and Facilities.

From the EFDS, the Marine Corps develops a single Approved Acquisition Objective (AAO). The AAO includes equipment modernization plans and addresses all initial issue quantities and planned sustainability requirements for the AC and RC. There are three types of appropriations the RC utilizes for procurement of ground and aviation equipment and aircraft: Procurement Marine Corps (PMC), Aircraft Procurement Navy (APN), and NGREA. PMC is the primary source of funding for ground equipment, and APN is the primary source of funding for aviation equipment. NGREA is a Congressional add, not part of the formal budgeting process, which has been used historically to fund a significant portion of Reserve ground and aviation equipment requirements.

c) USMC Plan to Fill Mobilization Shortages in the RC: The total wartime equipment requirement for Marine Forces Reserve (MARFORRES) is called the Table of Organization and Equipment (T/O&E). For MARFORRES, the T/O&E consists of two parts: a Training Allowance (T/A) and In-Stores assets. The T/A is the equipment MARFORRES units maintain at their training sites. The amount of T/A each unit has is determined by training requirements, space limitations, and staffing levels at the unit training sites. The balance of the MARFORRES equipment requirements is referred to as the In-Stores assets. These are held at the two Marine Corps Logistics Bases (MARCORLOGBASES), located at Albany, GA, and Barstow, CA.

Upon mobilization, MARFORRES ground equipment shortfalls will be augmented with Remain Behind Equipment (RBE) left by AC units deploying to locations with pre-positioned assets. MARFORRES units may also benefit from pre-positioned assets contingent on the Operational Plan being executed. Hence, when MARFORRES units mobilize and integrate into the gaining MAGTF, RBE or pre-positioned equipment, or both, will serve to mitigate equipment shortfalls.

d) Current USMC Initiatives Affecting RC Equipment: The current focus of the Marine Corps is on speed, agility, and flexibility in both its equipment and organization.

The ability of the RC to seamlessly integrate with the AC is heavily dependent upon the ability of Reserve equipment to meet the above-mentioned parameters. This is a driving force affecting RC equipment.

## A Tradition Of Transformation



e) USMC Plan to Achieve Full Compatibility between the AC/RC: Although much of the equipment used in the RC is older than that of the AC, the Marine Corps is bridging the gap through the Total Force policy. Working in conjunction with the AC, gear is fielded concurrently across the components. These efforts allow the Marine Reserve to remain a potent and combat ready force, ready to integrate with AC units. Two successful examples of this are the RC's acquisition of the Medium Tactical Vehicle Replacement (MTVR) and the planned acquisition of the LW155 Howitzer. Full funding of the F/A-18A ECP-583 modernization program will bring the reserve "Hornet" fleet on par with the newer F/A-18C's in the AC. However, much of the RC's communication gear, vehicles, and other aviation programs are suffering from under funding and reaching the limits of their operating life. Continued emphasis on modernization and equipment upgrades is necessary to ensure the Marine Corps retains its war fighting capabilities.

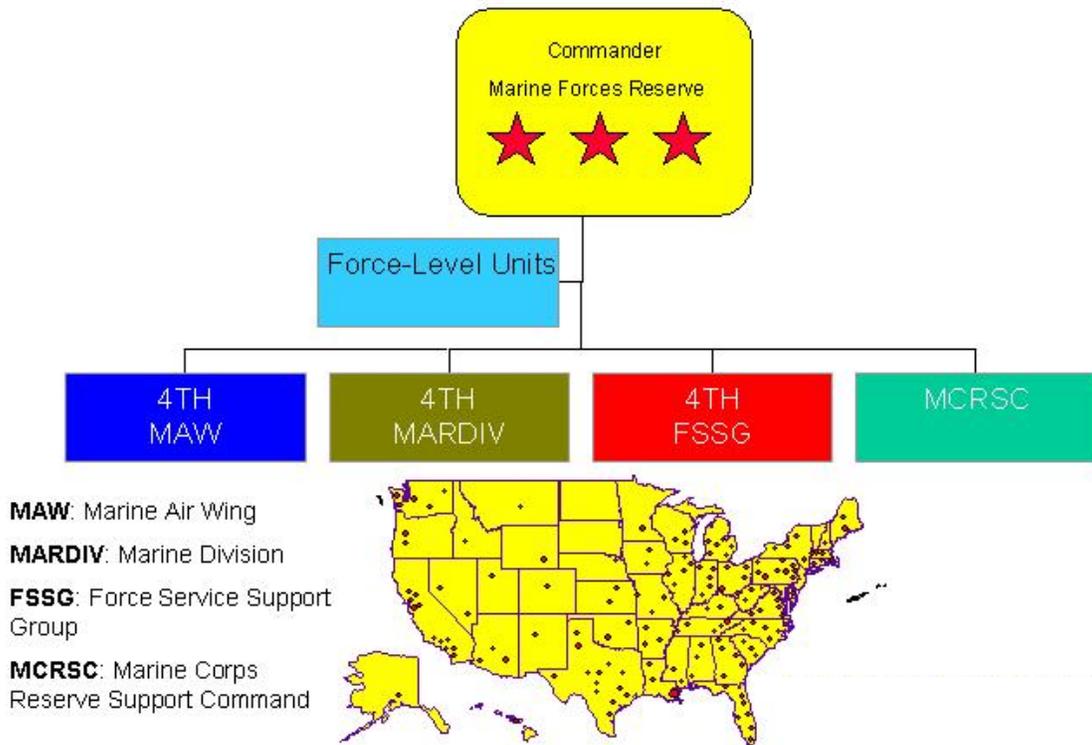
f) Other Marine Corps Specific Issues: The aim of the Integrated Logistics Capability (ILC) is to provide exponentially greater combat effectiveness. ILC initiatives impact all levels, organizations and processes associated with the logistical support of ground operations, weapon systems and equipment. The logistics transformation and

process modernization, together with the cutting edge suite of technologies provided by Global Combat Service Support- Marine Corps (GCSS-MC), will maximize the combat capabilities of the MAGTF.

## II. Marine Corps Reserve (USMCR) Overview

### a) Current Status of the USMCR

1) General Overview: The USMCR contributes to the defense of the nation at home and abroad on a daily basis. Current active duty end strength is 175,000 Marines while the USMCR is budgeted for 39,600 Marines in FY04. Reserve forces are a crucial component of the USMC. Since September 11, 2001 there have been over 24,000 Marine Reservists activated in direct support of OEF, OIF, and the GWOT.



### **Selected Marine Corps Reserve (SMCR) Units**

In May 2003 over 20,000 Marine Reservists were directly involved in combat operations in Iraq. The entire 4th Force Service Support Group, which provides transportation, maintenance, medical, dental, engineering, supply and landing support was mobilized in support of OIF. In addition to all Reserve Light Armored Reconnaissance (LAR) and Amphibious Assault Vehicle (AAV) companies, Marine Aerial Refueler Transport (VMGR) and Marine Heavy Helicopter (HMH) squadrons. Reserve infantry battalions, and aviation support squadrons also were called to duty in large numbers. These units directly participated in the fight to free Iraq, contributing by participating in everything

from direct combat to security and humanitarian relief alongside AC units. When asked to comment on the performance and integration of the USMCR activated in support of OIF, the Commandant of the Marine Corps replied "... let me tell you - our Marine Reserves are Marines first ... there was absolutely no difference in performance on the ground, in the air, in logistics."

2) Status of Equipment: Since the war on terrorism began there has been an increase in the operational tempo of Reserve forces. Despite the scheduled fielding of new systems, much of the Marine Corps equipment still needs modernization. Currently the maintenance of aging legacy platforms requires increased financial and manpower investment with each passing year due to parts obsolescence and higher equipment failure rates. Additionally, maintaining legacy equipment has led to a downward spiral in which the Marine Corps annually invests more funds for operations and maintenance, leaving insufficient funding for new equipment procurement. A long-range vision for funding legacy system upgrades will not only result in better operational readiness, but will also be a more responsible allocation of the Nation's resources.

(a) Equipment on Hand: The equipment the RC maintains on hand (T/A) is reviewed annually and assigned to Reserve training centers based on the quantity and type of equipment each center can adequately maintain and store. *Table 1* provides specific information on Marine Corps Reserve equipment inventories and required equipment numbers.

(b) Average Age of Major Items of Equipment: *Table 2* provides the average age of selected major items of equipment.

(c) Compatibility of Current AC/RC Equipment: Reserve units supporting OEF and OIF discovered some critical incompatibility issues between AC/RC communication and ground equipment, reducing the efficacy of command and control. Also RC aircraft lacked the capabilities of their AC counterparts resulting in reduced lethality and mission capability.

\$1.5M of FY03 NGREA funds was used to purchase tactical radios with increased performance capabilities. Additional funding is required to rectify the remaining disparity in communication equipment.

The Marine Corps Reserve is upgrading its F/A-18As with Engineering Change Proposal (ECP) 583 to achieve operational and logistical commonality with F/A-18Cs in the AC. Additionally, the Navy and the Marine Corps are involved in the Avionics Upgrade Program for the KC-130T to comply with new and emerging worldwide airspace requirements to ensure that the aircraft can operate in the joint environment.

(d) Maintenance Issues/Programs: The maintenance of equipment remains one of the top priorities for MARFORRES. Sufficient funding must be programmed to sustain the materiel readiness and capability of legacy systems and new acquisitions.

These systems are currently maintained at a requisite level of readiness due to the hard work of skilled Marines and the assistance of Congress in providing resources for maintenance and spare parts. This section briefly reviews some programs and initiatives that help maintain and improve the materiel readiness of the systems in the RC.

- **Depot Maintenance**: The Marine Corps Depot Maintenance Program enhances equipment readiness for both the AC and RC. The RC continues to be proactive in articulating their depot maintenance requirements through the annual Marine Corps Depot Maintenance Process.

- **Intermediate Maintenance Initiatives**: To mitigate increasing maintenance costs, MARFORRES has implemented better business practices by outsourcing and competitively bidding some of its more complex 4th and 5th echelon maintenance repair requirements. Specifically, they have outsourced M1A1 tank maintenance requirements to Ft. Riley, Kansas, and their diesel engine remanufacture to UNICOR in Beaumont, Texas. In addition to considerable savings, these outsourcing practices resulted in faster turn-around time and increased readiness.

- **New Equipment Fielding**: The continued fielding of the HMMWV-A2, the MTVR, and replacements for 4K forklift and extendable boom forklifts have



HMMWV-A2

substantially reduced the overall maintenance burden on the force.



MTVR

- **Corrosion Control**: One of the key elements in achieving an effective preventive maintenance program is a consistent corrosion control and coating program. Proper corrosion control and coating extends the life of ground equipment resulting in reduced costs associated with corrosion damage. Funding received in FY 2002 (\$600K) helped MARFORRES initiate coating and other corrosion control programs for units holding principal end items. Sustained and consistent funding in FY 2003-2007 (estimated at \$5M) is critical for the corrosion control programs to be effective.

e) Modernization Programs and Shortfalls

- **F/A-18A Engineering Change Proposal (ECP)-583**: The Marine Corps Reserve's top modernization priority is upgrading the fleet of 36 RC F/A-18A Hornet aircraft with ECP-583. Currently all 36 RC upgrades are funded in FDYP. However, this remains our top priority for acceleration purposes. The modified "A" aircraft will have the same capabilities as a LOT 17



F/A-18C aircraft, an aircraft eight years newer. This upgrade enables the aircraft to self-designate precision munitions; employ the newest generation of air-to-ground/air-to-air weapons, conduct night operations, and employ the latest secure, jam-resistant radios. The primary factor driving the F/A-18A upgrade is the mitigation of the current F/A-18C/D inventory shortfall, which becomes almost unmanageable beyond FY 2006.

- CH-53E Helicopter Night Vision System (HNVS): The second highest modernization priority is upgrading the fleet of 21 CH-53E helicopters with HNVS. Currently all aircraft are funded in FDYP. However, this remains a top priority for acceleration purposes. The CH-53E HNVS “B” Kits are a third generation Forward Looking Infrared (FLIR) system. Its purpose is to enhance the ability to operate at night or under periods of reduced visibility. The pilot’s display includes engine performance, flight instruments, navigation, and



motion information on a variety of display pages superimposed on the panel display unit’s screen. This upgrade significantly expands the operational envelope of the aircraft.

- KC-130T Avionics Modernization Program (AMP): Avionics equipment installed in the KC-130T is outdated, out of production, and rapidly approaching obsolescence. The KC-130T’s configuration does not comply with emerging Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) or mandated Navigation/Safety requirements. Failure to comply with emerging CNS/ATM requirements will result in exclusion from preferred oceanic routes and military airspace, longer flight times, and



restrictions on approach and landing. Operational commanders cannot afford potential restrictions to the employment of these aircraft given the documented shortage of lift assets within the DoD. The USMCR supports the AMP program as a Department of the Navy (DON) initiative, combining the need to upgrade.

- Quadruple Container (QUADCON) and Palletized Container (PALCON):



These containers provide the Marine Corps with a fully inter-modal transport capability, emphasizing dimensional standardization and International Standards Organization to ensure compatibility. MARFORRES employs these containers to store and transport small equipment and consumable supplies in organic transportation assets. The containers are safe and efficient for use in all climatic conditions. The containers can be transported on the Navy’s amphibious ships, commercial cargo ships, and by the Air Force. Currently

2,715 QUADCONS (\$1.6M), and 3,730 PALCONS (\$2.9M) are not funded.

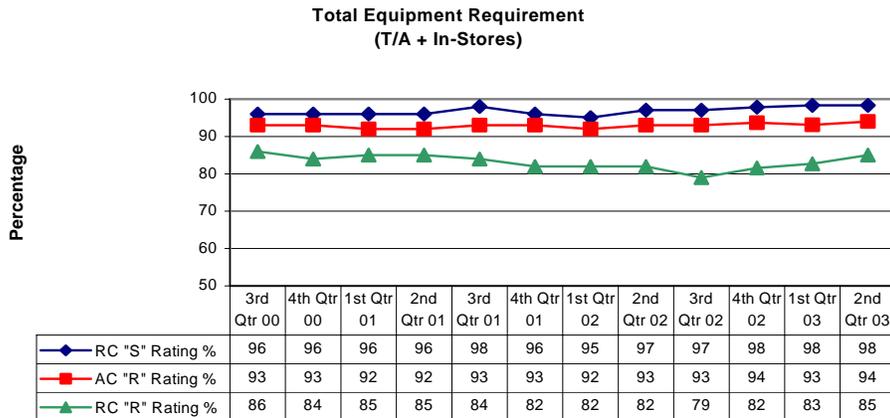
- KC-130T Electronic Flight Instruments (550 EFI): The new Model 550 EFIs will replace the old Model 200 EFI. This is necessary due to the non-supportability, which was brought about by obsolescent parts and vanishing vendors. Available glass for the model 200 EFI ended in 1998, which is a reason many of the Model 200 have failed. There is no US vendor, and only one foreign vendor could produce the glass at \$30K per pane. The New EFIs are equipped with cooling fans to prevent glass failure as well as the newest generation of glass.



EFI replaced the Hyper-Spectral Imagery (HIS) and the Altitude Directional Indicator (ADI) in the KC-130T's. They are installed four per aircraft and provide critical flight data to the Pilot and Copilot. These instruments are also Night Vision Imaging System (NVIS) compatible, allowing for use of Night Vision Goggles. This program will also tie into an Air Force program that is currently replacing the model 200 EFI's. The Model 200 EFI had a Mean Time Before Failure (MTBF) of 200 hrs, whereas the 550 is listed to get 7000 hrs MTBF. All boxes would be ordered and installed in the same year. All testing is complete and they are approved for use. However, zero of 14 units are currently funded.

f) Overall Equipment Readiness: The general state of readiness of USMCR ground equipment, as represented in the graph below, is good, but well below that of AC. RC equipment consists of the T/A, located at the Reserve Training Centers and In-Stores assets held at MARCORLOGBASES. In order to better describe the state and readiness of the equipment, two variables are used. The Supply Equipment On-Hand, or "S" rating, is the percentage of total on-hand and In-Stores equipment as compared to the total number authorized in the T/O&E. The Equipment Operational Capability, or "R" rating, is the total percentage of equipment on-hand or In-Stores that is mission capable. The represented lower equipment readiness is due to a combination of the age of legacy equipment, impact of past funding shortfalls, and lower priority of funding for maintenance. However, increased focus in preparation for OIF support has shown slight gains as demonstrated in the graph. It is getting more difficult and costly to maintain these systems at the desired levels of operational readiness. The Marine Corps Reserve is prepared to augment the AC quickly and effectively as it demonstrated during OEF and OIF. However, these issues must be rectified in order to maintain the desired level of readiness in the RC.

## **SHORT AND LONG TERM RC MAINTENANCE CHALLENGES GROUND EQUIPMENT READINESS**



Headquarters, Marine Corps, in conjunction with the Logistics Management Institute, and under the auspices of the Office of the Secretary of Defense/Reserve Affairs' (OSD/RA), Reserve Unit Priority System, developed the Marine Corps Readiness Equipment Module-Reserves (MCREM-R) to provide OSD-mandated Reserve readiness reports. This process assists MARFORRES in calculating the equipment ratings for the Reserve Table of Equipment and facilitates the application of the In-Stores assets, which provides better visibility of readiness and in-stores equipment. In addition to ground equipment readiness reporting, MCREM-R enables materiel readiness managers to analyze the reasons why equipment is inoperable.

### b) Changes Since Last NGRER:

- Over 20,000 Marine Corps Reservists, the largest number activated since the Gulf War in 1991, were mobilized in support of OIF and the GWOT. These Marines, from Privates to General Officers, augmented and reinforced the AC, performing various duties ranging from direct combat to planning and support.

- In a Memorandum of Understanding (MOU), The Secretary of the Navy with the Commandant of the Marine Corps (CMC) and the Chief of Naval Operations (CNO), provided the framework and guidance to fully integrate Naval tactical aviation. The Navy and Marine Corps will integrate Tactical Air (TacAir) forces to provide Combatant Commanders and joint forces with flexible, responsive, interoperable and expeditionary forces to support deployed and surge operations. As a result of TacAir integration, one Reserve F/A-18 squadron will be decommissioned in 2004. In 2006, squadron Primary Aircraft Authorized (PAA) will be reduced from 12 to ten PAA. This will change the Table of Organization (T/O) of Reserve squadrons to mirror that of AC carrier based squadrons; hence, increasing the RC's ability to deploy.

c) Future Years Program (FY 2005 - FY 2007):

1) FY 2007 Equipment Requirements: The USMCR has numerous unfunded equipment priorities that affect all elements of the MAGTF. Fielding of new or upgraded ground equipment and aviation modernization remain the top priorities. Additional funding for modernization and equipment shortages is necessary to maintain mission capable status and to ensure the RC is a force multiplier upon activation. RC equipment deficiencies are listed in *Table 1*.

2) Anticipated New Equipment Procurements:

- MV-22 Osprey: The Osprey is a tilt-rotor, advanced technology, vertical/short takeoff and landing (V/STOL), multi-purpose tactical aircraft being developed to replace the current fleet of CH-46E and CH-53D aircraft. This aircraft will have the capability to participate in amphibious and land assault, raids/operations, as well as medium cargo lift, and tactical recovery of aircraft and personnel. The Osprey is capable of carrying 24 combat-equipped



Marines or a 10,000 pound internal load and has a 2,100 nautical mile range with a single aerial refueling. One of MARFORRES's long-term goals is to accelerate the fielding of the MV-22 Osprey to the RC.

- Advanced Amphibious Assault Vehicle (AAAV): The AAAV is an armored, tracked, armed amphibious vehicle that can transport personnel. The AAAV will join the MV-22 and Landing Craft, Air Cushion (LCAC) as an integral component of the amphibious triad required to execute Expeditionary Maneuver Warfare. The AAAV will allow naval expeditionary forces to maneuver ashore in a single, seamless stroke giving both sea and land forces sufficient space for maneuver, surprise, and protection. The AAAV's



unique combination of speed, mobility, firepower, armor, and Nuclear, Biological and Chemical protection, will allow U.S. forces to avoid the enemy's strengths while exploiting its weaknesses. The AAAV remains the number one ground acquisition program of the Marine Corps.

- HIMARS: HIMARS is a C-130 transportable, wheeled, indirect fire system capable of delivering all rockets and missiles in the current and future Multiple Launch Rocket System Family of Munitions (MFOM). HIMARS extends the range of available fire support from 30 KM to 60+ KM. The Marine Corps plans to establish an interim capability in the second quarter of FY 2005 and a target Initial Operational Capability (IOC) scheduled for FY 2007.



Current plans are to field two battalions in the 14th Marine Regiment with 18 launchers each.

- Lightweight 155mm (LW 55) Howitzer: The LW 155 is the world's first 155mm towed howitzer with a "fly-weight" of less than 9,800 pounds. It has digital fire control and offers greater mobility and improved reaction times compared to the M198 Howitzer it is designed to replace. The LW 155 will meet increased operational thresholds in lethality, survivability, mobility, deployability, and sustainability required to support maneuver warfare.



3) Anticipated Transfers from AC to RC: Reference *Table 5*.

4) Anticipated Withdrawals from RC Inventory: Reference *Table 5*.

5) Remaining Equipment Shortages, Modernization Shortfalls at the end of FY 2007: Reference *Table 8*.

d) Summary/Conclusions: Operational requirements of the past year have again demonstrated the importance of the Marine Corps Total Force approach and the necessity to continue strong investment in the USMCR. Equipping and training the RC to the same standards as the AC will promote interoperability and war-fighting capability when needed. The challenge of Homeland Security will no doubt be increasingly shouldered by the RC as it is already "forward deployed" on the frontline in over 180 locations across the country. The near future will also see a rise in complementary capabilities within the Reserve such as the HIMARS program, which is a key element in our "fixing fires" efforts. The coming year provides an opportunity, not without challenge, to create a balanced war-fighting force of AC and RC that will be broadly and seamlessly integrated.

**USMCR**

Table 1

**Consolidated Major Item Inventory and Requirements**

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
<b>AIRCRAFT</b>							
AIRCRAFT,HELICOPTER, UTILITY, UH-1N	UH-1N	6,132,000	20	20	20	20	20
AIRCRAFT,HELICOPTER, CARGO, CH-53E	CH-53E	33,972,000	21	21	21	21	21
AIRCRAFT,HELICOPTER, ATTACK, AH-1W	AH-1W	17,098,000	38	38	38	38	38
AIRCRAFT,HELICOPTER, CARGO, CH-46E	CH-46E	12,668,000	26	26	26	26	26
AIRCRAFT, REFUELING/CARGO, KC-130T	KC-130T	40,663,000	28	28	28	28	28
AIRCRAFT, UTILITY CARGO, UC-12B	UC-12B	3,964,000	3	3	3	3	3
AIRCRAFT,FIGHTER/ATTACK,F/A-18A	F/A-18A	47,237,000	48	48	48	48	48
AIRCRAFT, FIGHTER, F-5E	F-5E	9,402,000	12	12	12	12	12
AIRCRAFT, FIGHTER, F-5F	F-5F	13,435,000	1	1	1	1	1
AIRCRAFT, UTILITY CARGO, UC-35C/D	UC-35C/D	6,088,000	4	4	4	4	4
<b>COMMUNICATIONS, OTHER</b>							
AIRBORNE MOBILE DIRECT AIR SUPT CNTRL	A0010	684,949	2	2	2	2	2
COMM GEAR	A0011	70,000	124	124	124	124	172
RADIO SET, AN/TYQ-101	A0021	199,999	0	0	0	0	1
COMMUNICATIONS PLATFORM, AIR DEFENSE	A0025	470,456	1	1	1	1	4
AUTO TELEPHONE AN/TTC-42(V)	A0248	917,671	9	9	9	9	10
COMMUNICATIONS CENTRAL (MECCS)	A0274	500,000	2	2	2	2	4
COMMUNICATIONS TECH CTRL CENTER	A0311	185,934	0	0	0	0	5
DECODER GROUP	A0465	29,837	14	14	14	14	14
SATELLITE COMMUNICATIONS CENTRAL	A0655	425,000	0	0	0	0	3
RADIO SET, AN/TSQ-207	A0821	2,047,000	2	2	2	2	2
INTEL OPS (IOS-INTEL) SERVER, AN/UYQ91(V)2	A0873	72,800	0	0	0	0	9
INTERROGATOR SET	A0881	32,447	12	12	12	12	12
TACTICAL DEFENSE ALERT, RADAR SET	A0891	235,000	6	6	6	6	6
MANPACK SATELLITE COMM TERMINAL	A0918	48,000	78	78	78	78	89
QUICK REACTION SATELLITE ANTENNA	A1310	225,000	3	3	3	3	3
RADAR SET, FIREFINDER	A1440	7,000,000	2	2	2	2	4
RADAR SET, LT WT AIR TRAFFIC CTRL, AN/TPS-63B	A1500	3,865,675	2	2	2	2	4
RADAR SET, LIGHTWEIGHT 3D	A1503	13,148,554	2	2	2	2	2

**USMCR**

Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
COMMUNICATIONS GEAR	A1530	60,800	44	44	44	44	66
RADIO SET, AN/GRC-193B (V)	A1795	42,987	46	46	46	46	68
RADIO SET, AN/GRC-171B	A1818	41,999	75	75	75	75	82
RADIO SET, AN/MRC-138B(V)	A1935	44,244	170	170	170	170	237
RADIO SET, AN/MRC.142B	A1954	289,603	1	1	1	1	1
RADIO TERMINAL SET, AN/MRC-142	A1955	201,851	39	39	39	39	64
RADIO SET, AN/MRC-145	A1957	95,840	307	307	307	307	351
RADIO SET, AN/PRC-104 B(V)	A2065	19,079	556	556	556	556	621
RADIO SET, UHF, AN/PRC-113(V)3	A2069	8,529	355	355	355	355	355
RADIO SET, MANPACK, AN/PRC-119A	A2070	10,370	1,550	1,550	1,550	1,550	1,550
RADIO SET, VEHICULAR, AN/VRC-88D	A2074	11,475	389	389	389	389	432
RADIO SET, VEHICULAR, AN/VRC-89D	A2075	18,155	38	38	38	38	38
RADIO SET, VEHICULAR, AN/VRC-90D	A2076	12,165	14	14	14	14	14
RADIO SET, VEHICULAR, AN/VRC-91D	A2077	18,680	48	48	48	48	48
RADIO SET, VEHICULAR, AN/VRC-92D	A2078	20,920	33	33	33	33	33
RADIO SET, AN/PRC-119F	A2079	4,422	597	597	597	597	597
RADIO SET, AN/VRC-83(V)2	A2164	18,360	112	112	112	112	112
RADIO SET, VEHICULAR, AN/VRC-88A	A2167	12,832	415	415	415	415	500
RADIO SET, VEHICULAR, AN/VRC-89A	A2168	17,500	61	61	61	61	91
RADIO SET, VEHICULAR, AN/VRC-90A	A2169	11,079	69	69	69	69	138
RADIO TERMINAL, DIGITAL TROPOSCATTER	A2179	672,120	22	22	22	22	24
SWITCHBOARD, TELEPHONE, SB-3614	A2505	46,696	63	63	63	63	67
SWITCHING UNIT, TELEPHONE, SB-3865	A2508	228,535	58	58	58	58	59
TACTICAL AIR OPERATIONS MODULE (TAOM)	A2525	6,946,240	6	6	6	6	6
TACTICAL (GATEWAY) DATA NETWORK	A2535	428,507	0	0	0	0	6
FIRE SUPPORT, MOBILE TDS AN/GYK-47(V)6	A2542	66,550	20	20	20	20	156
FIRE SUPPORT, MOBILE TDS AN/GYK-47(V)7	A2545	56,670	54	54	54	54	156
INTERFACE SYSTEM, COMMUNICATIONS	A3270	496,660	3	3	3	3	3
<b>ENGINEER &amp; OTHER EQUIPMENT</b>							
AIR CONDITIONER, MCS HORIZONTAL, 9,000 BTU	B0001	4,126	7	7	7	7	48
AIR CONDITIONER, MCS HORIZONTAL, 18,000 BTU	B0002	5,356	34	34	34	34	68
AIR CONDITIONER, MCS VERTICAL, 60,000 BTU	B0007	11,000	15	15	15	15	24
AIR CONDITIONER, MCS, SKID MOUNTED	B0011	3,998	17	17	17	17	61
AIR CONDITIONER, VERTICAL, 18,000 BTU	B0012	5,600	166	166	166	166	236
BOAT, BRIDGE ERECTION	B0114	170,000	7	7	7	7	48
BRIDGE ERECTION SET -MGB-	B0120	640,000	1	1	1	1	8

**USMCR**

Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
BRIDGE, ARMORED VEHICLE LAUNCHED	E0150	592,545	3	3	3	3	8
BRIDGE, MEDIUM GIRDER, DRY GAP	B0152	1,200,000	4	4	4	4	12
BRIDGE, SCISSOR F/ AVLB	E0149	155,863	3	3	3	3	12
CONTAINER HANDLER, ROUGH TERRRAIN, 50,000 LB	B0391	350,000	2	2	2	2	11
CRANE, HIGH SPEED, W/PILE DRIVER CAP	B0443	230,000	6	6	6	6	28
CRANE, ROUGH TERRAIN, HYDRAULIC LIGHT	B0446	85,000	14	14	14	14	45
FUEL DISP. SYS TACTICAL AIRFIELD FIRESTONE	B0675	386,481	0	0	0	0	8
GENERATOR SET, 3 KW, 60 HZ, SKID-MOUNTED	B0730	5,050	136	136	136	136	285
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW	B0891	12,100	128	128	128	128	319
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW	B0921	15,303	7	7	7	7	26
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW	B0953	22,012	111	111	111	111	240
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW	B0971	24,348	7	7	7	7	8
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW	B1016	20,443	16	16	16	16	16
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW	B1021	19,088	80	80	80	80	146
GRADER, ROAD, MOTORIZED	B1082	190,000	20	20	20	20	20
HELICOPTER EXPEDIENT REFUELING SYSTEM	B1135	112,049	1	1	1	1	7
LIGHTWEIGHT DECONTAMINATING SYSTEM	B1291	24,349	48	48	48	48	262
LINE CHARGE LAUNCH KIT, TRAILER MOUNTED	B1298	3,945	8	8	8	8	50
PUMP MODULE, FUEL (SIXCON)	B1580	41,000	38	38	38	38	129
SCRAPER-TRACTOR, WHEELED	B1922	257,000	7	7	7	7	18
STORAGE TANK MODULE, FUEL (SIXCON)	B2085	10,100	99	99	99	99	383
TRACTOR, FULL TRACKED, W/ANGLE BLADE	B2460	95,000	20	20	20	20	29
TRACTOR, MEDIUM, FULL TRACK, D7G CATERP	B2462	192,500	31	31	31	31	54
TRACTOR, ALL WHEEL DRIVE	B2482	129,000	12	12	12	12	25
TRUCK, FORKLIFT, EXTENDABLE BOOM	B2561	96,146	40	40	40	40	93
TRUCK, FORKLIFT, ROUGH TERRAIN, 4,000 LB	B2566	43,250	61	61	61	61	99
TRACTOR, ROUGH TERRAIN, ARTICULATED STEER	B2567	180,000	68	68	68	68	104
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	262,000	9	9	9	9	63
<b>TACTICAL VEHICLES</b>							
TRUCK, 7-TON CARGO 6x6 MTRV	D0198	143,115	19	19	19	19	20
POWER UNIT, FRONT, 12 1/2 TON, 4X4	D0209	187,000	145	145	145	145	302
TRUCK, AVIATION REFUELER CAPACITY	D0210	176,000	0	0	0	0	9
SEMI-TRAILER, REFUELER, 5,000 GAL	D0215	98,064	11	11	11	11	50
SEMI-TRAILER, LOWBED, 40 TON	D0235	45,599	43	43	43	43	54
TRLR, POWERED, 22 1/2 T, CONTAINER HAULER	D0876	72,837	73	73	73	73	233

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Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
TRAILER, POWERED, WRECKER/RECOVERY	D0877	205,342	7	7	7	7	21
TRLR, 5TH-WHL 4X4, SEMI-TRLR ADAPTER	D0878	88,801	43	43	43	43	56
TRLR, 20 TON 4X4 CARGO W/CRANE	D0879	134,794	19	19	19	19	65
TRAILER, TANK, WATER, 400 GAL, 1 1/2 TON	D0880	12,955	186	186	186	186	266
TRAILER, RIBBON BRIDGE	D0881	123,759	27	27	27	27	95
TRUCK, AMB, 4 LITTER ARMD, 1 1/4 TON HMMWV	D1001	107,323	22	22	22	22	91
TRUCK, AMB, 2 LITTER, 1 1/4 TON HMMWV	D1002	61,520	40	40	40	40	47
TRUCK, CARGO, 5 TON, 6X6, W/O WINCH	D1059	155,000	753	753	753	753	1,058
TRK CARGO, 5 TON, W/WINCH	D1061	157,000	79	79	79	79	115
7-TON LONG BED TRUCK (MTVR) MK27	D1062	140,184	0	0	0	0	115
TRK A/C CRASH & STRUCTURE FIRE FIGHTING	D1064	240,000	10	10	10	10	18
TRK DUMP M817/M929/M930	D1072	185,000	30	30	30	30	80
TRK, TOW CARRIER, W/SA, 1 1/4T, HMMWV	D1125	73,729	126	126	126	126	164
TRUCK, TRACTOR, 5 TON, 6X6, W/O WINCH	D1134	160,000	22	22	22	22	51
TRK, UTIL, CARGO, 5/4 T W/EQUIP HMMWV	D1158	58,018	1,108	1,108	1,108	1,108	1,752
TRK, UTIL, ARMT CARR, W/SA, 1 1/4T HMMWV	D1159	72,113	166	166	166	166	309
TRUCK, UTILITY, SHELTER CARRIER, 1 1/4T	D1180	50,778	30	30	30	30	38
TRUCK, WRECKER, 5 TON, 6X6	D1212	280,000	56	56	56	56	58
LAV, ANTI-TANK	E0942	1,352,000	16	16	16	16	16
LAV, COMMAND AND CONTROL (BN)	E0946	868,000	8	8	8	8	8
LAV, LIGHT ASSAULT, 25MM	E0947	906,000	60	60	60	60	60
LAV, LOGISTICS	E0948	825,000	20	20	20	20	20
LAV, MORTAR	E0949	1,918,000	8	8	8	8	8
LAV, MAINTENANCE/RECOVERY	E0950	488,972	7	7	7	7	7
<b>TRACKED COMBAT VEHICLES</b>							
ASSAULT AMPHIBIOUS VEHICLE, COMMAND	E0796	2,000,000	5	5	5	5	10
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	2,000,000	42	42	42	42	103
ASSAULT AMPHIBIOUS VEHICLE, RECOVERY	E0856	1,159,043	1	1	1	1	8
RECOVERY VEH FT HEAVY	E1378	2,590,000	4	4	4	4	10
TANK, COMBAT, FT, 120MM GUN	E1888	4,300,000	59	59	59	59	64
<b>WEAPONS</b>							
CIRCLE, AIMING	E0180	2,612	134	134	134	134	143
JAVELIN	E0207	125,000	56	56	56	56	64
DATA DISPLAY GROPU	E0277	9,776	107	107	107	107	108
EQUIPMENT SET, NIGHT VISION	E0330	54,000	173	173	173	173	184
HOWITZER, MEDIUM, TOWED, 155MM	E0665	750,000	90	90	90	90	90

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Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
INTERROGATOR SET, PROGRAMMER (STINGER)	E0726	19,121	19	19	19	19	22
INTERROGATOR SET, IFF (STINGER)	E0727	18,115	196	196	196	196	196
LAUNCHER, ASSAULT ROCKET, 83MM (SMAW)	E0915	10,299	211	211	211	211	216
LAUNCHER, TUBULAR, F/GM TOW WEAPON SYS	E0935	73,536	174	174	174	174	182
MACHINE GUN, CAL .50, BROWNING, HB FLEXIBLE	E0980	14,002	328	328	328	328	482
MACHINE GUN, MEDIUM, 7.62MM, GRND VERSION	E0989	8,000	754	754	754	754	794
MACHINE GUN, 40MM	E0994	14,581	283	283	283	283	480
ORDINANCE	E1035	520,000	5	5	5	5	5
MODULAR UNIVERSAL LASER EQUIPMENT (MULE)	E1045	500,032	68	68	68	68	134
MORTAR, 60MM LWCMS	E1065	10,658	71	71	71	71	72
MORTAR, MEDIUM, EXTENDED RANGE	E1095	24,717	71	71	71	71	72
MUZZLE VELOCITY SYSTEM (M94)	E1145	14,500	32	32	32	32	32
NIGHT VISION SIGHT, CREW SERVED WEAPON	E1159	24,900	316	316	316	316	411
POSITION AZIMUTH DETERMINATION SYS(PADS)	E1210	417,826	20	20	20	20	21
RIFLE, SNIPER, 7.62MM, W/O EQUIPMENT	E1460	3,114	77	77	77	77	88
RIFLE, SNIPER, SEMI-AUTO, CAL .50	E1475	6,405	34	34	34	34	34
PEDESTAL MOUNTED STINGER (AVENGER)	E1836	1,059,000	36	36	36	36	60
RECEIVER, INFRARED	E1837	24,068	84	84	84	84	109
<b>TEST EQUIPMENT</b>							
TEST SET, MISSILE GUIDANCE	E1911	20,366	27	27	27	27	32
TEST SET, GM	E1912	393,562	23	23	23	23	32
TEST SET, NIGHT VISION	E1947	27,000	1	1	1	1	12

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Table 2

**Average Age of Equipment**

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

<b>Nomenclature</b>	<b>Equip No.</b>	<b>Average Age</b>	<b>Remarks</b>
AIRCRAFT, HELICOPTER, UTILITY, UH-1N	UH-1N	32	
AIRCRAFT, HELICOPTER, CARGO, CH-53E	CH-53E	15	Nine aircraft are on average 19 years old, the other three were new as of FY00.
AIRCRAFT, HELICOPTER, ATTACK, AH-1W	AH-1W	10	
AIRCRAFT, HELICOPTER, CARGO, CH-46E	CH-46E	36	
AIRCRAFT, REFUELING/CARGO, KC-130T	KC-130T	17	
AIRCRAFT, UTILITY CARGO, UC-12B	UC-12B	22	
AIRCRAFT, FIGHTER/ATTACK, F/A-18A	F/A-18A	19	
AIRCRAFT, FIGHTER, F-5E	F-5E	30	
AIRCRAFT, FIGHTER, F-5F	F-5F	27	
AIRCRAFT, UTILITY CARGO, UC-35C/D	UC-35C/D	5	
RADIO SET MRC-138B	A1935	24	
RADIO TERMINAL AN/TRC-170	A2179	13	
CRANE MOUNTED TRUCK	B0443	16	
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	21	Being replaced with the EROWPU
AIRCRAFT REFUELER	D0215	20	2/3 of equipment will be 27 yrs old. Remaining 1/3 will be 8 yrs old by 2002.
TRUCK, LVS	D0209	19	
TRUCK, 5TON	D1059	23	Being replaced with the Medium Tactical Vehicle (MTVR)
TRUCK, HMMWV	D1158	20	Being replaced with the HMMWVA2
HOWITZER, MEDIUM, TOWED 155MM	E0665	22	Being replaced with the Lightweight 155MM Howitzer (LW155)
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	32	Being replaced with the AAV, RAMRS program will help improve fleet reliability (FY99-02), Last Service Life Extension Program (SLEP) occurred between 1982-1986. New SLEP scheduled for FY06-17.
LAV, LIGHT ASSAULT VEHICLE, 25MM	E0947	19	SLEP scheduled to occur between FY04-07
TANK, COMBAT, 120MM	E1888	14	

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Table 3

**Service Procurement Program - Reserve (P-1R)**

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All cost values are in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>WEAPONS AND COMBAT VEHICLES</b>				
AAV7A1 PIP	6,751,000	769,000	949,000	
LAV PIP		11,792,000	1,747,000	
MODIFICATION KITS (TRKD VEH)	673,000	2,924,000	2,430,000	
M1A1 FIREPOWER ENHANCEMENTS		14,151,000		
HIMARS	16,340,000	136,953,000	190,233,000	
155MM LIGHTWEIGHT TOWED HOWITZER		33,887,000	17,195,000	
MOD KITS (ARTILLERY)	292,000	437,000	418,000	
MARINE ENHANCEMENT PROGRAM	611,000	616,000	622,000	
MODULAR WEAPON SYSTEM	2,959,000			
<b>GUIDED MISSILES</b>				
HIMARS ROCKETS	1,325,000	32,731,000	54,967,000	
<b>COMMUNICATIONS AND ELECTRONICS EQUIPMENT</b>				
UNIT OPERATIONS CENTER		22,055,000	28,726,000	
MULTIPLE ROLE RADAR SYSTEM	284,000	105,000	86,000	
AUTO TEST EQUIP SYS	1,735,000		2,208,000	
GENERAL PURPOSE ELECTRONIC TEST EQUIP.	1,341,000	1,318,000	1,334,000	
RADAR SET AN/TPS-59	1,020,000		1,216,000	
INTELLIGENCE SUPPORT EQUIPMENT	197,000		207,000	
MOD KITS (INTEL)	260,000	261,000	263,000	
GENERAL PURPOSE MECHANICAL TMDE	768,000	686,000	699,000	
NIGHT VISION EQUIPMENT	5,782,000	14,807,000	1,381,000	
COMMAND POST SYSTEMS		1,199,000	1,901,000	
RADIO SYSTEMS	2,367,000			
COMM SWITCHING & CONTROL SYSTEMS	176,000	168,000	173,000	
AIR OPERATIONS C2 SYSTEMS	534,000	494,000	581,000	
INTELLIGENCE C2 SYSTEMS		3,144,000	195,000	
FIRE SUPPORT SYSTEM	459,000			
<b>SUPPORT VEHICLES</b>				
ITEMS LESS THAN \$5 MILLION	192,000	178,000	182,000	

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Table 3

**Service Procurement Program - Reserve (P-1R)**

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>ENGINEER AND OTHER EQUIPMENT</b>				
ENVIRONMENTAL CONTROL EQUIP ASSORT	261,000	1,370,000	1,712,000	
BULK LIQUID EQUIPMENT	159,000	148,000	150,000	
TACTICAL FUEL SYSTEMS	753,000	766,000	783,000	
POWER EQUIPMENT ASSORTED	1,733,000	1,676,000	1,741,000	
AMPHIBIOUS RAID EQUIPMENT	133,000	117,000	117,000	
MATERIAL HANDLING EQUIP	2,754,000	5,274,000	6,858,000	
FIELD MEDICAL EQUIPMENT	469,000		1,201,000	
TRAINING DEVICES	3,586,000	4,861,000	7,131,000	
CONTAINER FAMILY	626,000	551,000	561,000	
FAMILY OF CONSTRUCTION EQUIPMENT	940,000	3,651,000	1,404,000	
MODIFICATION KITS	128,000	111,000	113,000	
<b>TOTAL</b>	<b>\$55,608,000</b>	<b>\$297,200,000</b>	<b>\$329,484,000</b>	

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Table 4

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
RESERVE AUTOMATED SUPPORT SYSTEM (RASS)		900,000	650,450	Common End User Computer Equipment
CH-53E HNVS B KITS	1,815,000			Helicopter Night Vision Systems
QUAD CONTAINER	1,766,000	655,000		
COMMERCIAL EMBARKATION BOXES	833,000	500,000		
RIGID HULL INFLATABLE BOATS	265,000			
KC-130T CNS/ATM	250,000			
EMBARKATION PALCON		578,000		
INTERIM LIGHTING PACKAGE		862,000		
KC-130 T COCKPIT ARMOR/LOX BOTTLE ARMOR PLATING		740,000		
KC-130 T OIL COOLER AUGMENTATION/AIRCRAFT RETROFIT		2,000,000		
AN/PRC-148 HANDHELD RADIO		814,000		
AN/PRC-150 HIGH FREQUENCY MANPOWER RADIO		400,000	1,500,000	
VIASAT VDC-400/500 MODEMS		168,000		
ALTERNATE POWER EQUIPMENT		1,018,000		
TACLANE KG-175 ALTERNATE POWER EQUIPMENT		242,000		
AIRCRAFT IMRL DET PACKAGES			2,053,616	
KC-130T NVL KIT			550,000	
AN/PVS-17B			4,666,500	
KC-130T ARC 210 RADIO			1,480,000	
AH-1W ELECTRONIC WARFARE SUITE (AFC 230)			7,830,000	
AN/PRC-117(V)1(C)			1,120,000	
TRUSTED SYSTEMS SECURITY CONTAINER			910,000	
COMBAT VEHICLE TRAINING SYSTEM			4,185,435	
AN/PRC-150 (C)			750,000	
AN/PVS-17C			1,813,500	
RT-1523B AN/PRC-119F			268,080	
AN/PAS-13			5,952,108	
ALTERNATIVE POWER SOURCE PACKAGE			1,411,350	
DIGITAL COC CAPABILITY			1,159,200	

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Table 4

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
KC-130T EFI's			700,000	
SMART-T AN/TSC-154			1,600,000	
EPLRS RADIOS (AN/VSQ-2C)			300,000	
SECURE IRIDIUM SATELLITE PHONES			96,000	
NON-LETHAL WPNS KIT - LARGE			353,400	
NON-LETHAL WPNS KIT - SMALL			123,600	
AUTOMOTIVE BATTERY MAINTENANCE PACKAGE			792,861	
EMBARKATION MOBILIZATION BOXES			990,000	
1993 NGREA KC130 NVIS/HUD COST INCREASE			3,410,000	
<b>TOTAL</b>	<b>\$4,929,000</b>	<b>\$8,877,000</b>	<b>\$44,666,100</b>	

**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 Active 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 2005 Qty	FY 2006 Qty	FY 2007 Qty	Remarks

**Service has no planned transfers or withdrawals for the years FY 2005 thru FY 2007**

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
AAV7A1 PIP				2,000,000	5,795,000		
LAV PIP				300,000			
IMPROVED RECOVERY VEHICLE (IRV)					5,605,000		
MODIFICATION KITS (TRKD VEH)					4,610,000		
155MM LIGHTWEIGHT TOWED HOWITZER					1,569,000		
MARINE ENHANCEMENT PROGRAM					953,000		
AUTO TEST EQUIP SYS					293,000		
GENERAL PURPOSE ELECT TEST EQUIP.				1,200,000	958,000	2,155,000	2,148,895
ITEMS UNDER \$5 MILLION (COMM & ELEC)					468,000		
COMMON COMPUTER RESOURCES				600,000	546,000		
COMMAND POST SYSTEMS					4,455,000		
COMM SWITCHING & CONTROL SYSTEMS				200,000	225,000		
COMM & ELEC INFRASTRUCTURE SPT					3,816,000		
MOD KITS MAGTF C41					347,000		
AIR OPERATIONS C2 SYSTEMS				600,000	549,000		
INTELLIGENCE C2 SYSTEMS				1,300,000	594,000		
MOD KITS (INTEL)					264,000		
GENERAL PURPOSE MECHANICAL TMDE					694,000		
5/4T TRUCK HMMWV (MYP)				12,900,000	12,582,000		
ITEMS UNDER \$5 MILLION (SPT VEH)					2,669,000		
ENVIRONMENTAL CONTROL EQUIP				300,000	567,000		
TACTICAL FUEL SYSTEMS					1,431,000		
DEMOLITION SUPPORT SYSTEMS					98,000		
POWER EQUIPMENT ASSORTED				300,000	322,000		
TRAINING DEVICES				5,800,000			
CONTAINER FAMILY				1,000,000	952,000		
ITEMS UNDER \$5 MILLION (ENG & OTHER EQ)					272,000		
CH-53E HNVS						1,815,000	1,815,000
GCP-2A INFRARED LASER TGT MARKER						208,000	208,000
MULTIPLEXOR AN/FCC-100						24,500	23,353

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NAREA	
		Plan	Actual	Plan	Actual	Plan	Actual
QUAD CONTAINER						546,500	535,000
SPECIAL APPLICATION SCOPED RIFLE (SASR)						216,000	216,000
<b>TOTAL</b>				<b>\$26,500,000</b>	<b>\$50,634,000</b>	<b>\$4,965,000</b>	<b>\$4,946,359</b>

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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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 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 an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

<b>PR</b>	<b>Nomenclature</b>	<b>Total Req'd</b>	<b># Units Short</b>	<b>Unit Cost</b>	<b>Total Shortage Cost</b>	<b>Rationale/ Justification</b>
1	Initial Issue (APECS,E-tool,ILBE,LW Helmet,OTV,SAPI)	Various	Various	Various	37,986,000	OIF II/GWOT
2	AN/PVS-17B	1,653	616	4,506	2,775,696	OIF II/GWOT
3	AN/PVS-17C	618	215	4,711	1,012,865	OIF II/GWOT
4	AH-1W Aircraft Survivability Equipment	38	20	435,000	8,700,000	OIF II/GWOT
5	AN/PRC-117(V)1(C)	40	40	28,000	1,120,000	OIF II/GWOT
6	AN/PRC-148 Handheld Radio	80	80	8,000	640,000	OIF II/GWOT
7	AN/PRC-150(C)	50	50	25,000	1,250,000	OIF II/GWOT
8	DDS Servers	98	24	92,000	2,208,000	
9	KC-130T ARC 210 Radio	28	5	370,000	1,850,000	OIF II/GWOT
10	AN/PAS-13	668	310	17,000	5,270,000	OIF II/GWOT

## Chapter 4 United States Naval Reserve

### I. Navy Overview

a) Overview of Navy-wide Planning Guidance: CNO on the Naval Services: “The Naval Services exist to fight and win the nation’s wars, to influence events and advance U.S. interests globally.” Naval forces support NMS objectives by: projection of power from the sea; sea control and maritime supremacy; strategic deterrence; strategic sealift; and forward naval presence. Sea Power 21, the Navy's vision for the future, revolves around three core concepts: "Sea Strike," projecting offensive capability; "Sea Shield," projecting defensive capability; and "Sea Basing," projecting sovereignty. Naval strategy identifies the need for the integration of the AC and RC into a seamless and cohesive Total Force capable of meeting all operational requirements in peacetime and in war.

The Naval Reserve (NR) supports the overall mission of the Navy, which is: “to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas.” The mission of the RC, as defined by Title 10, U.S.C. is to “...provide trained units and qualified persons available for active duty in the armed forces, in time of war or national emergency and at such other times as the national security may require...”

b) Navy-wide Equipping Policy: In compliance with DoD Directive 1225.6, the CNO establishes policy for equipping the NR through promulgation of OPNAV Instruction 4423.3. Navy policy is that NR units will be equipped to accomplish all assigned missions and will have an equipment and distribution program that is balanced, responsive to mission requirements, and sustainable. The priority for distribution of new and combat serviceable equipment, with associated support and test equipment, will be given to units scheduled to be deployed/employed first. Equipment priorities for NR units will be established using the same methodology as AC units having the same mobilization mission or deployment requirements.

The Navy’s overriding goal is to establish and maintain a seamless and fully integrated Total Force. Navy Resource Sponsors, as part of the Navy's resource allocation process, identify NR requirements for new equipment. Funding for equipping the NR is provided via the Department of the Navy’s President’s Budget (PRESBUD) request, direct Congressional adds to the PRESBUD, and Congressional adds of NGREA funding. *Table 3* identifies the amount of procurement funding programmed in support of the NR for FY 2005 through FY 2007. *Chart 1* lists Congressional additions provided in the last three fiscal years to support NR equipment requirements. *Table 4* identifies equipment procured with FY 2002 through FY 2004 NGREA funding.

CHART 1

**Congressional Adds to Navy Procurement Programs  
For Reserve Equipment**  
(In thousand dollars)

Source	Nomenclature	Equip Type	FY 2002	FY 2003	FY 2004	Remarks
APN	C-40A Aircraft	C-40A		63,000		C-40A aircraft to replace DC-9 aircraft
APN	Computer Based Training	CBT	4,500	4,300		Develop C-130T aircraft maintenance CBT
APN	C-37 Aircraft	C-37			55,000	Aircraft Procurement Acceleration
OPN	Littoral Surveillance System/ Joint Fires Network Unit	LSS/JFNU		14,000		2 <sup>nd</sup> LSS/JFNU for Naval Coastal Warfare
OPN	IT Continuity of Operations			1,800		Infrastructure Upgrade
OPN	Mobile Inshore Undersea Warfare Systems	MIUW		3,200		Upgrades MIUW Systems
OPN	Expeditionary Logistics Support Force	ELSF		1,800		Communication and Ground Equipment
OPN	Littoral Surveillance System/ Joint Fires Network Unit	LSS/JFNU			20,745	Equipment for the Naval Fires Control System
Total			4,500	88,100	75,745	

c) Navy Plan to Fill Mobilization Requirements: Major Operation Plans (OPLAN) and Contingency Plans require NR units to deploy as an integrated piece of the Navy war-fighting plan. Equipment requirements are identified by Navy Component Commanders and prioritized by the CNO. Requirements are identified, considered, and approved during the resource allocation process by Navy Component Commanders and cognizant Resource Sponsors.

Required equipment is either maintained at the NR activity as both a training and mobilization asset (i.e., Naval Reserve Force ships, Naval Coastal Warfare units, and aircraft squadrons); or it is stored at major CONUS embarkation locations as War Reserve Materiel Stock (WRMS), pre-positioned overseas or afloat, or deferred from procurement. Storage as WRMS is typical of Civil Engineering Support Equipment and MHE required to support Naval

Construction Force (NCF) and Naval Expeditionary Logistics Support Force (NAVELSF) units upon mobilization and employment.

WRMS equipment is released, shipped, and used by both AC and NR components as dictated by OPLAN requirements. For example, the NCF deployed one Naval Mobile Construction Battalion Table of Allowance (TOA) on each of the three Maritime Prepositioning Squadrons deployed world-wide for use by AC or NR units in support of both OEF and OIF.

d) Current Navy Initiatives Affecting Naval Reserve Equipment: The Navy has several ongoing initiatives to modernize, improve, or change the operational capabilities of the NR. These initiatives include:

- The C-9 aircraft replacement program began in 1997 with the objective of replacing all of the NR's 27 aging DC-9/C-9B transport aircraft with the C-40A aircraft at a rate of three per year. To date, 15 C-40A aircraft have been funded or are programmed through a combination of NGREA, Congressional Adds and PRESBUD as follows:

FY	Qty	Funding Source
1997	2	NGREA
1998	1	NGREA
1999	1	NGREA
2000	1	PRESBUD
2001	1	CONG ADD
2002	0	
2003	1	CONG ADD
2004	1	PRESBUD
2005	1	PRESBUD
2006	3	PRESBUD
2007	3	PRESBUD
2008	0	PRESBUD
2009	0	PRESBUD

Six of the seven C-40A aircraft funded through 2003 have been received. The 7th C-40A is expected to be received in the fall of 2004.

- Modernization and replenishment of the Naval Coastal Warfare (NCW) boats and Civil Engineering Support Equipment (CESE). Procurement of this equipment is essential to replace assets depleted during OIF and ensure readiness for future operations. In PRESBUD 2004, \$6M was provided to procure replacement as well as new TOA boats for the NCW Units. In PRESBUD 2005, another \$7.5M will be used to procure additional boats. These procurements will complete the requirement for new boats. NCW is also upgrading a portion of their CESE (trucks and generator sets) TOA with over \$2M in FY 2004 NGREA funding.

- Development and execution of the Naval Construction Force's (NCF) plan to modernize, upgrade, and, recapitalize NCF equipment TOAs, including trucks, construction and maintenance equipment, fire fighting equipment and tactical vehicles. In PRESBUD 2004, over \$51M is allocated with an additional \$21M from a Congressional add, for the purchase of this equipment. In PRESBUD 2005, another \$39M has been programmed to continue the

recapitalization and modernization of NCF equipment. Additionally, the NCF received \$0.8M of NGREA funds for the procurement of two firearms training simulators to maintain mission-critical military skills in small arms handling.

- Modernization and replacement of the NAVELSF equipment TOA in order to improve current readiness and to ensure successful and safe cargo handling operations are conducted. PRESBUD 2004 allocated nearly \$0.8M toward this initiative with another \$0.8M per year across the FYDP. Additionally, \$4.6M of FY 2004 NGREA funding will be utilized to procure 30K cargo handling forklifts, various trailers and semi-trailers, and ten crane simulators.
- The C-37 executive transport aircraft program for VP-3 began in 2000. The C-37 program procurement goal is five aircraft. The first aircraft was delivered in FY 2002. Congress added funding for one C-37 in the FY 2004 Appropriation Bill. Funding for three remaining C-37 aircraft is in the FYDP for procurement of one in FY 2005 delivering in FY 2007 and procurement of the last two in FY 2009 delivering in FY 2011.
- Four major NR programs to modernize/upgrade NR aircraft.

Upgrade 30 NR F/A-18A fighter aircraft via ECP 560, to achieve compatibility with fleet F/A-18s in all aspects of the precision strike mission. The Naval Reserve currently possesses 28 ECP-560 kits and is using FY 2004 NGREA funding to procure two additional kits. This modernization requirement will enable the Reserve Force's F/A-18s to fully match the capability of the AC F/A-18Cs.

Procure twenty-seven Advance Targeting Forward-Looking Infrared (ATFLIR) kits, nine for each of three NR F/A-18 squadrons to improve the detection, tracking and targeting for precision-guided munitions, achieving compatibility and relevancy with active forces. This allows RC F/A-18 aircrews to train on equipment currently in use in the AC today. The installation of these assets will greatly reduce the training time required in the event of mobilization. Currently twelve are funded through the FY 2005 PRESBUD, and three ATFLIR kits will be procured with FY 2004 NGREA funds, allowing the use of one ATFLIR kit at each of the three NR F/A-18 squadrons starting in FY 2004.

Upgrade 20 Navy and 28 Marine Corps C-130T transport aircraft with improved avionics to make them compliant with Federal Aviation Authority/International Civil Aviation Office Communication, Navigation and Surveillance (CNS) requirements in support of Global Air Traffic Management (GATM). These upgrades will allow the NR's C-130T aircraft to operate in all global airspace. The C-130T upgrade is fully funded in the FYDP; engineering and design began in FY 2003, and the first aircraft are expected to be modified in FY 2007.

Upgrade six SH-60 aircraft with improved Communication/Navigation equipment that is mission essential for counter narcotics operations and is required to facilitate interoperability with Joint Inter-Agency Task Force agencies in the USSOUTHCOM Area of Operations. The NR currently operates six SH-60Bs. Of those six, currently only two are equipped with a VHF capable radio and a Global Positioning System (GPS). The remaining four aircraft will receive this upgrade using FY 2004 NGREA funding.

- Execution of the Navy's Helicopter Concept of Operations plan with a goal of replacing all Navy helicopters with MH-60S and MH-60R type/model/series aircraft. The NR's total program requirement is 30 MH-60S and 10 MH-60R aircraft. To date, 8 MH-60S aircraft have been funded for the NR. The NR's most immediate helicopter priority is to replace eight aging UH-3H aircraft with MH-60S aircraft. This replacement is scheduled to begin in FY 2006 with the delivery of the first four MH-60S aircraft to the NR.

- Replacement of 20 Navy and 12 Marine Corps F-5 aircraft with Swiss F-5 aircraft. The plan to purchase Swiss aircraft replaces the previous plan to repair the stressed airframes of the F-5s that are approaching fatigue life expenditure. In FY 2002 and FY 2003, five aircraft were purchased, all of which have been received. The procurement of eight additional F-5s will be completed using FY 2004 NGREA funding and the remainder of the F-5 aircraft procurement is programmed across the FYDP.

- USN replacement of all Flight I Class Guided Missile Frigates (FFG) with Flight III Class (H-60 capable) FFGs. The last one, USS CROMELIN (FFG 37), will be transferred to the NR in FY 2004.

e) Navy Plan to Achieve Full Compatibility between AC and RC:

The Navy will continue to manage Total Force equipment inventories to provide the most capable systems to meet mission requirements and minimize the effects of equipment shortfalls and incompatibility. The Navy stresses interoperability as part of the Total Force concept and makes no distinction between the AC and the NR. Equipment acquisition, upgrade programs, and equipment redistribution from the AC have reduced problems in the areas of NR equipment compatibility and capability with both active and joint forces

Sea Enterprise, part of CNO Adm. Vern Clark's "Seapower 21" vision, seeks to improve organizational alignment, refine requirements, and reinvest savings to buy needed platforms and systems. In light of the GWOT and the CNO's vision for the future (Sea Power 21), the AC and NR have been directed to implement ways to build a future Naval Reserve that is seamlessly blended into Sea Power 21, and is fully integrated with and operationally relevant to the active Naval forces.

The goal of the Navy is to transform the Naval Reserve so that it is fully integrated with the active force. Working Groups have been developing actionable end states in five separate areas; organizational structure, personnel management, readiness & training, hardware, and resources & funding. The redesign implementation plan is evolutionary in nature and will be pursued with Congressional concurrence. The targeted areas for improvement include: the AC establishing requirements for readiness and training of the NR; the AC developing, implementing and funding training of the RC; consolidation of AC and RC equipment where feasible; simplification of the funding processes; and validation of NR requirements by the AC to provide required capabilities.

As a part of this transformation, the Navy has initiated a plan to fully integrate the NR air force with the AC air force. This plan integrates and merges some NR squadrons across the FYDP while establishing Fleet Readiness Units (FRU). This integration aligns NR aviation assets and personnel in the helicopter and fixed-wing communities with the AC to increase

aircraft commonality, enhance operations support and develop increased warfare capability while fostering a closer integration with AC missions and requirements. This initiative will result in a fully integrated Naval air force and achieve the optimum mix of equipment for the total force.

## II. Naval Reserve (USNR) Overview

### a) Current Status of the USNR

(1) General Overview: The Navy's overriding goal is to establish and maintain a seamless and fully integrated Total Force. Navy policy is that NR units will be equipped to accomplish all assigned missions and will have an equipment and distribution program that is balanced, responsive to mission requirements, and sustainable. With ongoing integration efforts, equipment requirements will be determined by the AC, thereby enhancing equipment compatibility with AC.

The NR consists of hardware units and augmentation units. Equipment availability has a direct impact on unit training, unit readiness, and the ability to perform assigned missions, particularly in hardware-centric units. Systems Commands, i.e., Naval Supply Systems Command, Naval Facilities Engineering Command, Naval Air Systems Command, and Naval Sea Systems Command, act as project managers to establish equipment allowances for designated NR hardware units to support operational requirements.

NR hardware units currently consist of 24 ships and 230 aircraft, as well as 20 NCF, 14 NAVELSF, 45 NCW and 4 Explosive Ordnance Disposal (EOD) units. All NR Force ships, NCW, NCF, NAVELSF and EOD units are under the operational control of Fleet Forces Command; and NR aircraft squadrons are under the operational control of Commander, Naval Reserve Force.

(a) Naval Reserve Aviation: The Naval Air Reserve consists of four air wings: Commander, Helicopter Wing Reserve; Commander, Fleet Logistics Support Wing; Commander, Reserve Patrol Wing; and Commander, Carrier Air Wing Reserve Twenty (CVWR-20). The NR possesses 100 percent of the Navy's organic medium and heavy airlift and adversary training capability, 37 percent of the Navy's maritime patrol capability, 9 percent of the carrier air wings, and 12 percent of the Navy's rotary wing capability.

1. Reserve Carrier Airwing: The NR provides one of the Navy's eleven Carrier Air Wings. The wing (CVWR-20) is comprised of seven squadrons, (3) F/A-18A/B, (1) EA-6B, (2) E-2C, and (1) F-5E/F. During OIF, CVWR-20's Strike Fighter Squadron VFA-201 embarked aboard USS THEODORE ROOSEVELT in direct support of OIF. CVWR's EA-6B Squadron deploys annually in support of Operations SOUTHERN WATCH and NORTHERN WATCH to patrol the no-fly zones over Iraq. In FY 2002, CVWR-20 embarked onboard the USS NIMITZ (CVN 68) for a 54-day transit from Norfolk, VA, around South America in support of the ship's homeport change to San Diego, CA. In addition to CVWR-20's operational requirements, its squadrons are engaged in vast



**F/A 18A HORNET FIGHTER**

amounts of peacetime operations support to the AC. CVWR-20 provides nearly all of the Navy's adversary mission capability, and 100 percent of the Navy E-2C counter-narcotic flight support, while participating regularly in fleet exercises. Over the past two years, five F-5 aircraft were purchased from the Swiss, replacing the NR F-5 aircraft that were approaching fatigue life expenditure. An additional eight Swiss F-5 aircraft will be purchased in FY 2004 using FY 2004 NGREA funding.



**P-3C ORION  
SURVEILLANCE**

2. Reserve Maritime Patrol Aviation: The NR currently provides 37 percent of the Navy's Maritime Patrol capability, primarily participating in counter narcotics operations and anti-submarine warfare exercises. The NR has seven P-3 Squadrons, each with an aircraft allowance of six. All NR P-3 squadrons report to a single Patrol Wing Commander. Of the 40 P-3 aircraft required by the geographic Unified Commanders to be forward deployed, three are provided by the NR. In FY 2003, the NR completed the installation of eight P-3 Update III modification kits procured with NGREA funding, bringing to 29 the number of NR P-3C aircraft in an update III configuration. This modification reduces overall weight and complexity of previously installed ASW systems. It is designed to increase reliability and make maintenance procedures more efficient. Additionally, during FY 2003, the NR received two state-of-the-art Aircraft Improvement Program P-3 aircraft. The Program Review for

FY 2005 includes a Program Change Proposal that fosters a closer integration with the AC mission and requirements.

3. Fleet Air Logistics: The NR provides all of the Navy's organic intra-theater medium and heavy airlift capability. This airlift provides direct logistics support for Fleet Commanders worldwide and airlift support to all military departments within the CONUS. The NR's Fleet Logistics Support Wing consists of 14 squadrons operating C-40, C-9, C-20, C-37, and C-130 aircraft. The NR's C-9 aircraft average over 28 years in age and require substantial avionics upgrades and engine replacement to meet globally mandated noise abatement and navigation requirements. A significant NR airlift recapitalization was initiated in FY 1997 when \$120M was provided through NGREA for procurement of two C-40A aircraft to replace the aging C-9 fleet. Five more C-40A's were procured utilizing funding from NGREA, Congressional Adds, or the PRESBUD. To date, six C-40As have been accepted by the NR and are being operated by VR-59 at Naval Air Station Joint Reserve Base, Fort Worth, TX, and VR-58 at Naval Air Station, Jacksonville, FL. Expected delivery of the seventh aircraft is in November 2004. Another twelve C-40A's are programmed through FY 2007. FY 2004 funding has also been provided to support the installation of avionics upgrades to all 18 NR C-130T cargo planes. This upgrade will make the aircraft compliant with CNS/ATM requirements to fly in all global airspace. Additionally, Congress has added \$55M to the FY 2004 PRESBUD for procurement of one C-37 for the NR.



**C-40A CLIPPER TRANSPORT**

4. Reserve Helicopter Wing: The NR provides five helicopter squadrons to the Navy's rotary wing fleet. In addition, the NR provides personnel and equipment (seven MH-53E helicopters) in support of two composite (RC and AC) Airborne Mine Countermeasures (AMCM) squadrons. This represents 12 percent of the Navy's total helicopter inventory, as well as 100 percent of the Navy's Helicopter Combat Support Special Squadrons and 35 percent of the AMCM assets. The squadrons perform a variety of critical missions including search and rescue, logistics support, anti-submarine warfare, AMCM and counter narcotics operations. The NR helicopter inventory consists of the HH-60H, SH-60B, SH-60F, UH-3H and MH-53E aircraft. During OIF, HCS-4 and HCS-5 were partially mobilized and deployed to Kuwait and Iraq, participating in the support of special operations ground forces missions in urban and rural areas, supporting psychological operations, and helping with medical and casualty evacuations. The NR squadrons are also significantly involved with counter narcotics operations. In FY 2004, all six SH-60B aircraft will be equipped with VHF and GPS equipment, utilizing NAREA funding, in order to facilitate interoperability with Joint Inter-Agency Task Force agencies in the USSOUTHCOM Area of Operations. Additionally, the SH-60B squadron will be equipped with four FLIR kits, dramatically increasing the mission effectiveness by enabling critical night vision capability during counter narcotics operations. The implementation of the Navy's Concept of Operations Plan will eventually transition all helicopter squadrons in the Navy to the Sikorsky H-60 series helicopter. The NR's most immediate helicopter priority is to replace eight aging UH-3H aircraft with MH-60S aircraft. This replacement is scheduled to occur in FY 2006.



**SH-60B SEAHAWK HELICOPTER**

(b) Naval Surface Reserve Force

1. Naval Reserve Force (NRF) Ships: The NRF consists of twenty-three ships with homeports in four locations throughout the United States. NRF ships regularly deploy to support the Navy's operational requirements and relieve the operational tempo of AC ships. The NRF ships continue to be a vital part of the Navy, participating in numerous fleet operations and exercises such as UNITAS, RIMPAC 2002, CARAT 02, KERNAL BLITZ, COBRA GOLD and Caribbean counter-narcotic operations. Several NRF FFGs were deployed in support of OEF and NOBLE EAGLE. These ships are a significant operational asset as well as important training platforms for Naval Reservists.

The NR surface combatant force consists of eight OLIVER HAZARD PERRY Class Frigates (FFG). In FY 2003, the NR received three Flight III (SH-60B capable) Class FFGs replacing three older Flight I ships. In FY 2004, one additional Flight III FFG will be transferred from the AC.

The NR comprises approximately 60 percent of the Navy's surface ship mine warfare capabilities. The total number of NR Mine Warfare ships is 15: ten Mine Hunter Coastal (MHC) and five Mine



**USS CURTS (FFG 38)**

Counter Measure (MCM). All are home-ported in Ingleside, TX.

2. Naval Coastal Warfare (NCW): The NCW organization consists of 22



**INSHORE BOAT UNIT 17**

Mobile Inshore Undersea Warfare (MIUW) units, 14 Inshore Boat Units (IBU), and 9 Harbor Defense Command (HDC) units [possessing Mobile Ashore Support Terminal (MAST) equipment]. Specializing in coastal surveillance, NCW units provide surface and sub-surface surveillance of inshore areas including ports and harbors, tactical theater level command and control, and small boat capability to support operations by U.S. Naval forces. NCW units provide all of the Navy's capability for shallow water surveillance and detection of surface craft, subsurface craft, and swimmer threats.

The MIUW units have fully upgraded all of 22 Radar Sonar Surveillance Center suites. The final five upgrades were installed using HMMWV configuration vice a van configuration, making the units more mobile and easier to task-organize to meet diverse operational requirements. MIUW units are in high demand by Unified and Naval Component Commanders to support critical in-theater force protection and coastal surveillance exercises and operational requirements.

Following the terrorist attack on the USS COLE, several NCW units were recalled to active duty to provide in-theater force protection in the U.S. Central Command area of responsibility. Since the September 11<sup>th</sup> attack, the demand for NCW units has increased dramatically. Immediately after the attack, over one-third of the 4,000 person NCW force was mobilized and deployed to provide force protection and coastal surveillance in support of Naval Commanders throughout the world. The AC, realizing the importance of the NCW units' missions and functions, started the process to stand up AC units with similar capabilities in FY 2002. From FY 1997 through FY 2003, over \$162M of Other Procurement, Navy (OPN), Congressional Adds, and NGREA funding was provided to NCW to upgrade its equipment and capabilities.

During OIF, the NCW Reserve forces were again recalled to active duty and deployed to Kuwait and Iraq, providing anti-terrorism and force protection assets for U.S. and coalition maritime forces in the Arabian Gulf. During the war, three units were significantly involved in protecting the Port of Ash Shuaybah; providing security for Mohammad Al Ahmad Kuwait Naval Base; providing both seaward and landward security operations for the off-load of the largest amphibious force assembled since the Inchon landing during the Korean War; participating in a NCW mission in Umm Qasr during the major combat operations phase of the war; providing protection of the Iraqi gas and oil platforms; constantly coordinating with the Navy explosive ordnance disposal units, U.S. Coast Guard port security units, Kuwaiti Coast Guard and Navy ships, as well as U.S. Army troops, National Guard units, Marines, Naval Special Warfare units, Kuwaiti Ministers of Interior and Defense and civilian port authorities. The NCW force protection mission in Kuwait is expected to continue through 2004.

NCW forces were selected in FY 1998 to operate the Navy's initial Littoral Surveillance System (LSS), recently renamed Joint Fires Network Units (JFNU). JFNU integrates data from overhead tactical sensors, including aircraft and unmanned aerial vehicles, with MIUW close-in surface waterborne surveillance and shallow underwater surveillance sensor data to provide real-

time, integrated surveillance and targeting in support of forces ashore and land attack capable ships. To date, two JFNU have been funded. The first will be transferred to Whiteman, Air Force Base, MO in early 2004 and will be supported by MIUW 114 personnel. In FY 2003, a Congressional add of \$14M was provided to procure a second JFNU. The second JFNU will be transferred to Pascagoula, MS when received in June 2004 and will be supported by MIUW 212 personnel. In FY 2004, Congress added \$21M to the PRESBUD to procure equipment for this system.

3. NCF: The Reserve NCF provides 66 percent of the Navy's combat construction capabilities in support of Unified and Navy Component Commander operational requirements.

Under the operational control of FIRST Naval Construction Division, the reserve portion of the NCF consists of four Naval Construction Regiments (NCR), 12 Naval Mobile Construction Battalions (NMCB), two Construction Battalion Maintenance Units (CBMU), and one Naval Construction Force Support Unit (effective 1 OCT 2003). Immediately following the September 11<sup>th</sup> attack, over 700 personnel from CBMU 303 and other Reserve NCF units were mobilized and deployed to Camp Rhino and Kandahar Airport in Afghanistan and to other locations throughout the world to perform construction and force protection projects. During OIF, nearly 1800 reserve Seabees were recalled from 17 different units, representing 46 states and Washington D.C., conducting direct in-theater operations in the CENTCOM Area of Responsibility (AOR). In addition to their mobilization mission, NCF units provide peacetime operations support to reduce the backlog of real property maintenance and perform construction projects at Naval activities worldwide.



**NMCB 15 NAVAL RESERVIST AT WORK**

The reserve units of the NCF have equipment shortfalls in their deployment TOA pack-ups held in WRMS. Equipment shortfalls include tactical vehicles, other civil engineering support equipment, and communications gear. Significant funding increases beginning in FY 2003 (\$13M in FY 2003, \$51M in FY 2004, and \$40M in FY 2005) have placed the NCF on track to eliminate these shortfalls over the next 10 years. Additionally, funding was provided from FY 2004 NAREA to procure two mobile firearms training simulators to maintain mission-critical skills in small arms handling. In addition to the NCF's long range equipping plan for their Reserve units, one NCFSU was decommissioned in October 2003, further reducing equipment shortfalls.

4. NAVELSF: NAVELSF units constitute over 90 percent of the Navy's expeditionary logistics support capabilities. NAVELSF units provide a wide range of logistics capabilities to include: ship loading and discharge; operation of air cargo terminals and freight forwarding terminals; warehouse operation; and mobile mail centers. To maintain their skills during peacetime, cargo handlers carry out Fleet Hospital Support Program ship offloads and backloads, and provide operations support to Naval logistics commanders in the European, Pacific and Central Command AORs. They also occasionally augment the Navy's active duty cargo handlers during Maritime Preposition Force operations and exercises. NAVELSF equipment (civil engineering support equipment, material handling equipment, and

communications gear) held by units and in WRMS is serviceable, but requires some modernization. During FY 2001, FY 2002 and FY 2003, a total of \$2.7M in NGREA was given to NAVELSF to upgrade their TOA.

Immediately following the September 11<sup>th</sup> attack, over sixty personnel from NAVELSF units were mobilized and deployed to Bahrain in direct support of OEF/ONE. These personnel augmented Commander, Task Force 53, and performed cargo handling and air terminal operations in support of afloat and ashore operating units in the Arabian Gulf region. The requirement was for 36 personnel to remain in Bahrain on a continuous basis. This concluded in July 2003. In support of OEF and OIF, NAVELSF provided 385 personnel for forward logistics site support to offload Maritime pre-positioned ships, contracted ships, and charter ships in the EUCOM, CENTCOM, and PACOM AORs.

5. EOD: Under the operational control of COMPACFLT and COMLANTFLT, reserve EOD forces comprise four of the ten EOD Mobile Units in the Navy. EOD units provide combat ready forces to: eliminate ordnance hazards; clear harbors and approaches of obstacles; and salvage/recover ships, aircraft and weapons lost or damaged in peacetime or combat in support of the National Military Strategy.

## (2) Status of Equipment

(a) Equipment On Hand: *Table 1* provides NR major equipment inventories on-hand and requirements to meet assigned missions.

(b) Average Age of Major Items of Equipment: As in the AC, the NR possesses equipment requiring replacement and modernization. *Table 2* provides the average age of major equipment in the NR inventory. Of particular concern are the UH-3H aircraft (42 years old), the DC-9 aircraft (34 years old), the F-5E aircraft (29 years old), the C-9B aircraft (29 years old), and the EA-6B aircraft (28 years old). Additionally, significant amounts of the NCW, NCF, NAVELSF, and EOD TOA equipment, CESE and MHE is over-aged. As mentioned previously in this report, most of this equipment is in the process of being upgraded or replaced.

(c) Compatibility of Current Equipment with the AC: Achieving equipment compatibility and equivalent capability with the AC is one of the Director, Naval Reserve's highest priorities and is reflected in the NR unfunded equipment priority list (see *Table 8*). Navy procurement and upgrade programs, redistribution of equipment from the AC, and congressionally added funding have improved equipment capability/compatibility for the NR.

The NR has made great strides in aircraft modernization. One example of reduced capability as compared to the AC is the F/A-18 aircraft--only three of the F/A-18 aircraft have the ATFLIR kits.

For the NCF, NCW, NAVELSF, and EOD Units, sustainability and interoperability with other services/units with whom they operate are still challenges. Significant funding increases beginning in FY 2003 and across the FYDP have moved these organizations toward reducing these shortfalls. Congressional adjustments and NGREA funding has also been used significantly to reduce these deficiencies.

(d) Maintenance Issues: The NR shares the same readiness and maintenance challenges as the AC. Beginning in FY 1998, the Navy began to better fund maintenance requirements. Since FY 2000, the CNO placed an even higher focus on maintenance funding by making current readiness a top priority for the Navy. This focus resulted in an improved maintenance funding profile for the NR.

(e) Modernization Programs and Shortfalls: As with the AC, the NR has a considerable list of unfunded equipment replacement and modernization requirements. Each year, the Director Naval Reserve develops an unfunded equipment requirement list and forwards it for resourcing consideration. The NR's highest priority unfunded equipment requirements are contained in *Table 8*.

b) Changes Since Last NGRER

The Navy has programmed funds to purchase Swiss F-5 aircraft vice repair the current F-5s that have aging, stressed airframes; to purchase MH-60S aircraft to replace the eight aging UH-3H aircraft; to continue the procurement of the C-37 aircraft; to upgrade the C-130T transport aircraft with improved avionics; and to modernize the TOA equipment of the NCF, NCW, NAVELSF, EOD and Mobile Salvage Diving Units (MSDU).

Congressional adjustments for FY 2004 include funding for the procurement of a C-37 aircraft for the NR and funding for the Naval Fires Control System/Littoral Surveillance System. FY 2004 NGREA funding will be utilized to procure ECP-560 and ATFLIR upgrades for the F/A-18 aircraft, communication/navigation upgrades and FLIR kits for the SH-60B aircraft, precision approach equipment for the E-2C, and procurement of F-5 aircraft. In addition, FY 2004 NGREA funding will procure generator sets, 15-ton multi-use trucks, rough terrain cargo handling forklifts, trailers, semi-trailers, forklifts, boats for coastal warfare support, fire-arms training simulators, and crane simulators for the NCW, NCF, NAVELSF, MSDU and EOD Reserve units.

c) Future Years Program (FY 2005-FY 2007)

(1) FY 2007 Equipment Requirements: *Table 1* provides projected FY 2007 major equipment inventories and requirements. The replacement of the C-9A and DC-9 aircraft with C-40A aircraft continues to be the top equipment priority for the NR. *Table 7* provides a list of equipment substitutes within the NR.

(2) Anticipated New Equipment Procurements: Major equipment anticipated to be procured for the NR include four MH-60S and one C-40A aircraft in FY 2004, one C-40A aircraft and one C-37A aircraft in FY 2005 and one C-40A aircraft in FY 2006. *Table 6* compares NR planned versus actual equipment procurements for FY 2001.

(3) Anticipated Transfers from AC to RC: *Table 5* provides anticipated major equipment transfers from the AC to the NR.

(4) Anticipated Withdrawals from RC: *Table 5* provides major equipment to be decommissioned within the NR.

(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2007: *Tables 1 and 8* provide equipment inventories, shortfalls and modernization requirements of the NR.

d) Summary/Conclusions: As the Navy strives to seamlessly integrate the NR with the AC into a cohesive Total Force capable of meeting all operational requirements in peacetime and in war, NR equipment requirements will continue to be addressed through a combination of new equipment procurement, redistribution from the AC, modernization of equipment held in the NR inventory, and aviation unit integration.

The NR, as well as the AC, continues to face the problem of procurement requirements exceeding resources available. The top equipment priorities for the NR are procurement of the C-40A aircraft to replace aged DC-9 and C-9B aircraft; procurement of CESE and MHE equipment for NR NCW, NCF, NAVELSF, and EOD units; upgrade of the F/A-18A aircraft and procurement of the F-5 and MH-60S aircraft. As in the past, the Navy will continue to balance resources to best equip the AC and the NR to support mission requirements.

## Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
<b>AIRCRAFT</b>							
AIRCRAFT,TRANSPORT (SKYTRAIN)	C-9B	27,507,000	15	15	15	14	14
AIRCRAFT,TRANSPORT (SKYTRAIN)	DC-9	18,136,000	4	3	2	0	0
AIRCRAFT,TRANSPORT (BOEING 737-700)	C-40A	65,415,000	7	8	9	12	12
AIRCRAFT,TRANSPORT (HERCULES)	C-130T	34,514,000	20	20	20	20	20
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20D	31,595,000	2	2	2	2	2
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20G	38,559,000	4	4	4	4	4
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-37	53,481,000	1	1	2	3	3
AIRCRAFT,TRANSPORT (KINGAIR)	UC-12B	3,509,000	6	4	4	4	4
AIRCRAFT,PATROL,P-3C (ORION)	P-3C	57,305,000	42	42	30	18	18
AIRCRAFT,EARLY WARNING (HAWKEYE)	E-2C	79,333,000	8	6	6	6	6
AIRCRAFT,EARLY WARNING (PROWLER)	EA-6B	64,143,000	4	4	4	4	4
AIRCRAFT,FIGHTER/ATTACK, F/A-18A (HORNET)	F/A-18A	43,296,000	36	30	30	30	30
AIRCRAFT,FIGHTER/ATTACK, F/A-18B (HORNET)	F/A-18B	43,296,000	3	3	2	2	2
AIRCRAFT,FIGHTER, F-5E (FREEDOM FIGHTER)	F-5E	8,081,000	13	20	20	20	20
AIRCRAFT,FIGHTER, F-5F (FREEDOM FIGHTER)	F-5F	11,834,000	3	3	3	3	3
HELICOPTER,COMBAT (SEAHAWK)	MH-60S	15,245,000	0	0	4	8	8
HELICOPTER,COMBAT SAR (SEAHAWK)	HH-60H	18,835,000	16	16	16	16	16
HELICOPTER,COMBAT,SAR (SEAHAWK)	UH-3H	9,673,000	8	8	4	0	0
HELICOPTER,MINEWAR, (SEA DRAGON)	MH-53E	32,409,000	7	7	7	7	8
HELICOPTER,ASW,FRIGATE (SEAHAWK)	SH-60B	28,122,000	6	6	6	6	6
HELICOPTER,ASW,CARRIER (SEAHAWK)	SH-60F	20,166,000	6	6	6	6	6
<b>SHIPS</b>							
FRIGATE,GUIDED MISSILE (PERRY CLASS) FLIGHT III	FFG	322,887,952	9	9	9	9	9
SHIP,MINE COUNTERMEASURES (AVENGER CLASS)	MCM	154,193,429	5	5	5	5	5
SHIP,MINE HUNTER,COASTAL (OSPREY CLASS)	MHC	150,528,605	10	10	10	10	10
<b>NAVAL COASTAL WARFARE FORCES</b>							
MIUW SURVEILLANCE SYSTEM	RSSC/ MSP	6,200,000	22	22	22	22	22
BOAT, INSHORE (NCW)	IBU	500,000	84	84	84	84	84

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
LITTORAL SURVEILLANCE SYSTEM	LSS/JFNU	26,000,000	2	2	2	2	2
MOBILE ASHORE SUPPORT TERMINAL	MAST	3,200,000	5	7	8	8	8
<b>RESERVE NAVAL CONSTRUCTION FORCES</b>							
NAVAL CONSTRUCTION REGIMENT TOA	NCR	2,200,000	4	4	4	4	4
CONSTRUCTION BATTALION MAINTENANCE UNIT TOA	CBMU	11,000,000	2	2	2	2	2
NAVAL CONSTRUCTION FORCE SUPPORT UNIT TOA	NCFSU	47,000,000	1	1	1	1	1
NAVAL MOBILE CONSTRUCTION BATTALION TOA	NMCB	39,000,000	12	12	12	12	12
<b>RESERVE NAVAL EXPLOSIVE ORDNANCE DISPOSAL FORCES</b>							
NAVAL RESERVE FORCE EOD MOBILE UNITS TOA	NRFMU	3,734,197	4	4	4	4	4
<b>NAVAL EXPEDITIONARY LOGISTICS SUPPORT FORCES</b>							
MATERIAL HANDLING EQUIPMENT ITEMS	NAVELS F-MHE	16,622,500	1	1	1	1	1
CIVIL ENGINEERING SUPPORT EQUIPMENT ITEMS	NAVELS F-CESE	6,609,900	1	1	1	1	1

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Table 2

**Average Age of Equipment**

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

Nomenclature	Equip No.	Average Age	Remarks
<b>AIRCRAFT</b>			
AIRCRAFT,TRANSPORT (SKYTRAIN)	C-9B	29	These aircraft are being phased out by C-40A aircraft
AIRCRAFT,TRANSPORT (SKYTRAIN)	DC-9	34	The last DC-9 will be retired in FY 2007 upon receipt of the eleventh C-40A
AIRCRAFT,TRANSPORT (BOEING 737-700)	C-40A	5	
AIRCRAFT,TRANSPORT (HERCULES)	C-130T	10	
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20D	17	
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20G	10	
AIRCRAFT,TRANSPORT (KINGAIR)	UC-12B	24	
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-37	3	
AIRCRAFT,PATROL,P-3C (ORION)	P-3C	24	
AIRCRAFT,EARLY WARNING (HAWKEYE)	E-2C	20	
AIRCRAFT,EARLY WARNING (PROWLER)	EA-6B	28	
AIRCRAFT,FIGHTER/ATTACK,F/A-18A (HORNET)	F/A-18	19	Includes F/A 18A and F/A-18B aircraft
AIRCRAFT,FIGHTER,F-5E (FREEDOM FIGHTER)	F-5	29	Includes Swiss F-5s received in FY 2003 and FY 2004
HELICOPTER,COMBAT SEARCH/RESCUE (SEAHAWK)	HH-60H	13	
HELICOPTER,COMBAT,SAR	UH-3H	42	This will change in FY 2006 when the NR receives the first MH-60S replacements
HELICOPTER,MINESWAR,MH-53E (SUPER STALLION)	MH-53E	10	
HELICOPTER,ASW, (SEAHAWK)	SH-60F	14	
HELICOPTER,ASW, (SEAHAWK)	SH-60B	20	
<b>SHIPS</b>			
FRIGATE,GUIDED MISSILE (PERRY CLASS) FLIGHT III	FFG	23	
SHIP,MINE COUNTERMEASURES (AVENGER CLASS)	MCM	15	
SHIP,MINE HUNTER,COASTAL (OSPREY CLASS)	MHC	9	

### Service Procurement Program - Reserve (P-1R)

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All values are costs in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>AIRLIFT AIRCRAFT</b>				
C-40A	65,224,000	207,358,000	198,264,000	
<b>MODIFICATION OF AIRCRAFT</b>				
ADVERSARY	5,465,000	4,994,000	2,607,000	
H-46 SERIES	237,000	249,000		
H-53 SERIES	6,728,000	6,889,000	7,050,000	
C-130 SERIES	11,282,000	20,464,000	32,412,000	
CARGO/TRANSPORT A/C SERIES	912,000	15,025,000	23,989,000	
<b>SHIPS SUPPORT EQUIPMENT</b>				
DIVING AND SALVAGE EQUIPMENT	103,000	107,000	103,000	
<b>CIVIL ENGINEERING SUPPORT EQUIPMENT</b>				
GENERAL PURPOSE TRUCKS	34,000			
CONSTRUCTION & MAINTENANCE EQUIP	30,000	169,000	293,000	
FIRE FIGHTING EQUIPMENT	837,000	412,000	634,000	
TACTICAL VEHICLES	12,278,000	11,841,000	12,504,000	
ITEMS UNDER \$5 MILLION	991,000	1,109,000	670,000	
<b>SUPPLY SUPPORT EQUIPMENT</b>				
MATERIALS HANDLING EQUIPMENT	1,304,000	1,331,000	1,360,000	
<b>PERSONNEL AND COMMAND SUPPORT EQUIPMENT</b>				
C4ISR EQUIPMENT	21,796,000	26,319,000	7,848,000	
<b>TOTAL</b>	<b>\$127,221,000</b>	<b>\$296,267,000</b>	<b>\$287,734,000</b>	

### National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
F/A-18A ECTP-560 UPGRADE	1,200,000		6,000,000	
F/A-18A AT-FLIR UPGRADE			7,800,000	
NAVAL COASTAL WARFARE			2,114,000	Note 1
NCF FIREARMS SIMULATORS			600,000	
NAVELSF TOA EQUIPMENT	1,091,000	1,688,900	4,545,000	Note 1
IT INFRASTRUCTURE MODERNIZATION	2,060,000			
C-9 TRANSPORT AIRCRAFT UPGRADES	3,328,000			
SH-60B FORWARD LOOKING INFRARED KITS	1,700,000		2,600,000	
LASER MARKSMANSHIP TRAINING SYSTEMS	480,000			
CONTINUITY OF OPERATIONS EQUIPMENT		1,450,000		
C-130 ARMOR UPGRADE		350,000		
EA-6B 89A UPGRADE		5,000,000		
SH-60B COMMUNICATION/NAVIGATION UPGRADE			1,400,000	
MOBILE DIVING SALVAGE UNIT TOA EQUIPMENT			722,000	Note 1
E-2C NAVIGATION SYSTEM UPGRADE			600,000	
F-5 AIRCRAFT PROCUREMENT			8,640,000	
C-9 TRAINER			9,000,000	
REIMBURSEMENT TO THE U.S. TREASURY FUND		1,455,000	645,000	Note 2
<b>TOTAL</b>	<b>\$9,859,000</b>	<b>\$9,943,900</b>	<b>\$44,666,000</b>	

Note 1: Used for procurement of Civil Engineering Support Equipment, Material Handling Equipment and Communication Equipment to support unit wartime Table of Allowance requirements.

Note 2: Reimbursement to the U.S. Treasury Judgment Fund for a \$2,100,000 judgment against a prior-year C-9 procurement contract.

### 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 Active 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.*

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Qty</b>	<b>FY 2006 Qty</b>	<b>FY 2007 Qty</b>	<b>Remarks</b>
AIRCRAFT, TRANSPORT (SKYTRAIN)	DC-9	-1	-1	-2	Replaced by C-40A aircraft
AIRCRAFT, TRANSPORT (SKYTRAIN)	C-9B			-1	Replaced by C-40A aircraft
AIRCRAFT, EARLY WARNING	E-2C	-2			Disestablishment of VAW-78 Increase PAA at VAW-77
AIRCRAFT, PATROL	P-3C	-12	-12		Integration of VP Community
AIRCRAFT, TRANSPORT (KINGAIR)	UC-12B	-2			Reduction in PAA
AIRCRAFT, FIGHTER/ATTACK (HORNET)	F/A-18A	-6			Reduction in PAA (2 per squadron)
HELICOPTER, COMBAT, SAR (SEAHAWK)	UH-3H		-4	-4	Replaced with MH-60S aircraft

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
AIRCRAFT, TRANSPORT	DC-9	-4	-4				
AIRCRAFT, PATROL (ORION)	EP-3J	-1	-1				
HELICOPTER, ASW, FRIGATE	SH-2G	-12	-12				
SHIP, AIRCRAFT CARRIER	OSR	-1	-1				
F-18 SERIES				26,200,000			
H-46 SERIES				200,000			
H-53 SERIES				1,200,000			
C-130 SERIES				2,000,000			
CARGO/TRANSPORT A/C SERIES				1,100,000			
DIVING AND SALVAGE EQUIPMENT				100,000	117,000		
SONOBUOYS - ALL TYPES				3,700,000	3,687,000		
CONSTRUCTION & MAINTENANCE EQUIP				100,000	74,000		
ITEMS UNDER \$5 MILLION				100,000	66,000		
MATERIALS HANDLING EQUIPMENT				100,000	117,000		
AIRCRAFT, TRANSPORT C-40A						500,000	320,000
F/A-18A UPGRADES (ECP -560)						1,582,000	1,762,000
NAVAL COASTAL WARFARE						258,000	258,013
NAVAL CONSTRUCTION FORCE						2,465,000	2,454,000
NAVAL EXPEDITIONARY LOGISTICS SUPPORT FORCE						117,000	115,009
EXPLOSIVE ORDNANCE DETACHMENT						43,000	37,337
<b>TOTAL</b>				<b>\$34,800,000</b>	<b>\$4,061,000</b>	<b>\$4,965,000</b>	<b>\$4,946,359</b>

**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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No

**Service Does Not Use Substitution To Satisfy  
Major Item Equipment Requirements**

### Significant Major Item Shortages

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

PR	Nomenclature	Total Req'd	# Units Short	Unit Cost	Total Shortage Cost	Rationale/Justification
1	C-40A Transport Aircraft	27	12	64,600,000	775,200,000	Replace aging DC-9 and C-9B aircraft in lieu of extensive modernization required to meet strict FAA airspace mandates
2	NCW Trucks and Tents	Various	Various	Various	14,231,000	Replace aging equipment
3	NCF Replacement of Tactical Vehicles and Support Equipment	Various	Various	Various	192,101,848	Replace aging assets
4	NAVELSF Communications Equipment, Support Equipment and Material Handling Equipment	Various	Various	Various	49,972,595	Improve Communications in support of OEF and Homeland Defense and upgrade aging equipment
5	MH-60S Aircraft	18	8	33,000,000	264,000,000	Replace aging HH-60H and SH-60F with MH-60S aircraft (with armed helo combat SAR and OAMCM capability)
6	EOD Tactical Vehicles, CESE, and Small Boats	Various	Various	Various	5,346,000	Support planned growth of six EOD detachments
7	F/A-18 AT-FLIR	27	24	2,600,000	62,400,000	Match AC precision strike capability
8	C-130 Avionics Modernization Program	19	9	4,480,000	40,320,000	Current systems rapidly becoming obsolete and unsupportable. Lack of airspace compliance will restrict aircraft from applicable airspace.
9	F/A-18 A+ Block 2 Modification	30	30	5,335,000	160,050,000	Match AC capability
10	F/A-18A+ CATM/Captive Carry Assets	4	4	625,000	2,500,000	Training assets for Naval Air Reserve/decreases mobilization time

## Chapter 5 United States Air Reserve Components

### I. Air Force Overview

a) Overall Air Force Planning Guidance: To achieve the United States National Security Objectives, the Joint Chiefs of Staff developed a broad strategy, documented in the *Joint Vision 2020*. Based on the joint strategies laid out in *Joint Vision 2020*, the Air Force (AF) developed its guidance in *America's Air Force Vision 2020* to prescribe an understanding of what air and space power mean to the nation. This vision reiterates the Total Force commitment of "Active, Guard, Reserve...seamless in providing aerospace power." The Air Reserve Component (ARC), comprised of Air National Guard (ANG) and Air Force Reserve (AFR) units, supports this "Total Force" policy. The roles and missions of the ARC are mirror images of the Active Air Force. Since August 1998, to provide better integration of forces and as a response to changing world security, the AF has adopted the Expeditionary Air Force (EAF) concept. The EAF has organizationally linked geographically separated units into standing Aerospace Expeditionary Forces (AEF). These AEF units operate from AF installations and are ready to fight and to provide airlift, air refueling, and combat support elements on very short notice.

The EAF provides a full spectrum of capabilities that can be tailored to meet the requirements of the geographic Combatant Commanders (CC).

The following table provides a brief synopsis highlighting contributions by the ARC to the AF Total Force Team while supporting contingency and peacetime operations in FY 2003:

#### Air Force Reserve Component Provides

Weather Reconnaissance	100%
DOD Airborne Fire Fighting Support to the U.S. Forest Service	100%
Aerial Spraying	100%
Strategic Interceptor Force	100%
Air Control and Warning	100%
Joint STARS *	100%
Aeromedical Evacuation	90%
Tactical Airlift	58%
Air Refueling Tankers	54%
Strategic Airlift	58%
Combat Search and Rescue	50%
Combat Fighters	39%
Bombers	8%
Space Operations	8%

\* Blended ANG/AF Wing structure.

b) AF Equipping Policy: The National Defense Authorization Act for Fiscal Year 2000 directed the services to "conduct a comprehensive examination... of the national defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program and policies of the United States...". This examination is known as the

Quadrennial Defense Review (QDR). The QDR has shifted the basic model for defense planning from threat-based to capabilities-based. The QDR will be accomplished every four years and project capability requirements 20 years into the future. The results of the QDR lay the foundation for the AF equipping policy.

The ARC can be equipped in several ways:

- The AF plans, programs, and budgets for the procurement, transfer and modification of ARC weapon systems through the AF Corporate Structure.
- Congress authorizes and appropriates funding for the AF to fulfill specific ARC requirements.
- A single year procurement appropriation authorized by Congress for the NGREA (Appropriation 0350).
- Congressional adds to the AC account for RC equipment.

c) Service Plan To Fill Modernization Shortages in the ARC: Effective modernization of ARC assets is the key to remaining a relevant and capable combat ready force. The events of September 11, 2001 cemented the AF's Total Force policy already in place. The ARC is working shoulder-to-shoulder with the AC to win the GWOT. No longer a force held in reserve, the ARC now shares the tip of the spear. The AF recognizes this fact and has made significant improvement in modernizing and equipping the ARC on par with the Active component. While this is true, the reality of fiscal constraints still results in ARC modernization and equipment shortfalls. The AF has charged the lead commands with keeping the ARC a relevant and capable fighting force. Success in meeting ARC modernization goals depends on robust interaction with the lead commands and in keeping Congressional budgeting authorities informed of ARC requirements. There are no major issues affecting the full mobilization of the ARC.

d) Current Service Initiatives Affecting RC Equipment: To ensure that the ARC remains a relevant and capable part of the Total Force, the AF has committed to modernizing the ARC. There are a number of modifications and modernization efforts underway that will resolve reliability, maintainability, and capability issues for the ARC, several of which are highlighted below. Comprehensive reviews of ARC modernization initiatives can be found at <https://airguard.ang.af.mil/aq/> for the ANG and at <http://www.afrcrequirements.wpafb.af.mil/> for the AFR Reserve. The following are some of the AF modernization initiatives that affect the ARC:

#### C-5 Galaxy

- **AMP**: This is a modification consisting of two major efforts. First, it replaces unreliable/unsupportable engine/flight instruments and flight system components. Second, it installs GATM and Secretary of Defense-directed navigation/safety modifications for the Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS).
- **RERP**: This program improves reliability, maintainability, and availability while increasing Mission Capability rates above 75 percent. RERP replaces TF-39 powerplant with the

General Electric (CF6-80C2). Its new engine meets Stage III noise/emissions standards while improving payload capability and time-to-climb to meet GATM airspace requirements. Reliability enhancements include: APUs; electrical, hydraulic, fuel, fire suppression, pressurization/air conditioning systems, landing gear, and airframe.

### F-16 Fighting Falcon

- **Falcon STAR:** Increased involvement in operations such as Operations SOUTHERN WATCH, NOBLE EAGLE, and OEF has required employment of the F-16 fleet beyond the intended operational spectrum for which the aircraft was developed. As such, the purpose of the Falcon STAR (Structural Augmentation Roadmap) program is to replace or rework known life-limited structural parts to preclude the onset of widespread fatigue damage, maintain safety of flight, enhance aircraft availability and extend the life of affected components up to 8,000 hours. This program is distinct from previous F-16 structures improvement programs that have been identified through the Aircraft Structural Integrity Program (ASIP) as the weapon system has aged and operational use has evolved.

- **Towed Decoys:** Towed decoys protect fighters from radio frequency (RF) guided missiles. The ALE-50 RF towed decoy is currently fielded on F-16 Block 40/50. Air Combat Command (ACC) has funded a software integration of the standard F-16 ALE 50 pylons into the F-16 Block 30 aircraft and fielding has begun. ACC is funding pylons for the entire F-16 Block 25-52 fleet to support training and deployment requirements.

A-10 Thunderbolt II Precision Engagement: Precision Engagement (PE) is the number one priority for the A-10 community and will transform the A-10 cockpit and capability. The A/OA-10 remains a legacy weapon system, yet is expected to execute critical wartime tasking such as Airborne Forward Air Controller, Close Air Support, Combat Search and Rescue, and Air Interdiction. The aircraft computer, cockpit displays, and weapons delivery capability is outdated and contributes to high pilot workload. The PE program delivers a new avionics suite, a data link and precision weapons capability that will keep the aircraft viable and increase its lethality and survivability.

### F-15 Eagle

- **Fighter Data Link (FDL):** The FDL program is the key to future effective combat employment for the F-15. The need to tie together off-board and on-board sensors and to synthesize the resulting data into a clear picture of the entire engagement is essential to the F-15 pilot operating under the Combat Identification (CID) Rules of Engagement found in every theater of operation. "First look-first shoot" tactics are valid for both the F-15 and F-22 and require a robust CID capability. Operational tests and exercises consistently provide clear evidence that the FDL increases the kill ratio for the F-15 many times over the current capability, ensuring the F-15's lethality well into the 21<sup>st</sup> century.

- **Night Vision Imaging System (NVIS):** The NVIS Lighting Program modifies F-15 interior and exterior lighting to be compatible with the operational use of NVGs. With this modified lighting, F-15s will be able to operate in the full range of air-to-air mission scenarios.

The NVIS cockpit lighting provides NVG compatible lighting external to the instruments and controls in the cockpit. The exterior lighting includes a covert lighting mode and filtering to make the normal aircraft lights NVG friendly.

KC-135 Stratotanker GATM Modification: This program will provide an upgraded avionics suite that meets the requirements for aircraft interoperability within the future aerospace environment. The avionics suite will be improved in four major functional areas: communications, navigation, safety and surveillance, and flight deck control. The program includes controller-pilot data link communication, direct voice communication with air traffic control, required navigation performance, and automatic dependent surveillance.

### C-130 Hercules

- **Phase I - AMP**: This program will produce a baseline avionics configuration across the current C-130 fleet. Air Mobility Command, in coordination with ACC, ARC, and AF Special Operations Command, is undertaking the C-130 AMP to consolidate all E, H1, H2, and H3 aircraft into one configuration. The goal is to consolidate existing and projected aircraft modification programs in order to upgrade and standardize the aging C-130 fleet.

- **Phase II - Structural, Engines, and Environmental Improvements**: Phase II is designed to bring all older C-130 variants to the same basic aircraft systems configuration to increase reliability, maintainability and supportability, and performance. Phase II will complement the standardization effort of Phase I. All older C-130s will be equipped with the systems now present on C-130H aircraft. The upgrades would provide T56-A-15 engines, an increased capacity flight deck air-conditioner, auxiliary power units, and improved hydraulics.

### C-26 Aircraft

- **FLIR**: The C-26 Westinghouse WF-360 FLIR camera was replaced with a Westcam "Skyball". This program is now complete. The upgrade also included a sensor controller operating system upgrade, touch screen technology, emergency battery backup, Wulfsburg AM/FM/HF/VHF/UHF radios, and fire detection/suppression for the FLIR pod.

- **Electro-Optical Photographic Cameras**: A program is under way to augment the "wet film" capability of the C-26 with a digital camera. This technology will allow digital pictures to be taken and printed onboard the C-26, thus saving days of wet film processing time and allowing law enforcement agents to leave the aircraft with hard copies of imagery data.

HC-130 Aircraft Rescue System Upgrades: A low-cost NVIS Compatible Lighting System modification is in the contract phase for the Combat AF rescue fleet. A Personnel Locator System will be installed on 210<sup>th</sup> Rescue Squadron, Kulis, AK, and 129<sup>th</sup> Rescue Wing, Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew equipped with the PRC-112 survival radio.

e) Service Plan to Achieve Full Compatibility between AC and RC: Although the ARC generally has older equipment, the AF, through the Total Force policy, continues to modernize

ARC assets. These modernization efforts allow the ARC to remain relevant and combat ready on par with the Active component. The following sections address, in detail, the ARC's modernization programs.

## II. Air National Guard (ANG) Overview

### a) Current Status of ANG

(1) General Overview. The mission of the ANG, first and foremost, is to be prepared as a member of this nation's Total Force military team to fight and win. We demonstrated our preparedness and ability to fulfill this mission by responding to the President's declaration of war during OIF. ANG participation in OIF was significant. ANG provided 33 percent of AF aircraft (fighter, airlift, tanker, rescue, and Joint Surveillance Target Attack Radar System (JSTARS)). ANG A-10s flew the most combat sorties of any platform. The ANG built three stand-alone bases from the ground up. The Army received 50 percent of its weather support from the ANG. Additionally, the ANG provided 55 percent of deployed combat communication capability. The ANG is a front line fighting force capable of fulfilling any assigned mission. To ensure that the combat capability of our personnel and equipment is second to none, we aggressively pursue aircraft modernization and sustainment programs to ensure all ANG aircraft meet or exceed equivalent combat capability and mission requirements and relevance in the Aerospace Expeditionary Force (AEF). Filling its obligations in the AEF - while maintaining a high state of readiness for global commitment - is the ANG's number one priority. Our equipping philosophy continues to center around fulfilling the war-fighting Combatant Commanders' requirements via the Combat Quadrangle (CQ). The tenets of this quadrangle include Precision Attack, 24-hour Operations, Data Link/Combat ID, and Enhanced Survivability. The number one ANG aircraft modernization priority remains fielding precision strike capability in its fighters. To increase its precision strike capability, the ANG currently needs 133 precision targeting pods for F-16 aircraft, an avionics suite, data link, and 54 precision targeting pods for the A-10 fleet.

Today, the ANG is comprised of more than 108,000 men and women with over 1,360 aircraft in 88 flying wings (94 squadrons) and 243 independent mission support units. Since 9/11, there have been 36,567 ANG personnel mobilized. The ANG has flown 283,360 hours or 80,603 sorties. Thirty Four percent of all deployed Security Forces are ANG personnel. Guard units are located at 168 civilian and 92 military installations in 54 states and territories. The ANG stands head and shoulders above other countries' reserve air components in its war-fighting capability, professionalism, and technical competence. Few active air forces in the world, in fact, can match the ability of the ANG in the breadth and scope of its missions.

The total investment fly-away cost of the aircraft fleet alone exceeds \$48 billion. The current ANG contribution to the Total Force encompasses 24 percent of the rescue assets, 43 percent of the tankers, 43 percent of the theater airlift capability, 11 percent of the strategic lift, 32 percent of the general purpose fighters, 7 percent of the operational support aircraft capability, 26 percent of the tactical air support mission, 100 percent of the JSTARS aircraft (45 percent of the aircrews and mission crews), 100 percent of the counter narcotics aircraft capability, and 100 percent of the continental air defense.

The success of the AEF depends on the vital contributions of the Total Force- AF, AFRC, and ANG forces. In particular, the predictability and stability of the 15-month AEF cycle allows the ANG to participate at a greater rate than before. While support of operations *Noble Eagle and Enduring Freedom* placed greater demand on the Active, Reserve, and Guard, the ANG commitment to the AEF stabilized at pre-*Noble Eagle/Enduring Freedom* levels.

Indeed, during AEF Cycle 3 from March 2002 through May 2003, ANG fighter units participated in every AEF and deployed fighter aircraft to eight of the ten AEFs. ANG contributions to the Total Force were also robust during AEF Cycle 2, which ended in February 2002. ANG fighter units participated in all ten AEF elements. Thirty-one of 39 (79 percent) ANG fighter/bomber units participated in Cycle 2. Likewise, airlift and tanker units continued their high rate of participation with 23 of 28 (82 percent) ANG airlift and rescue units and 100 percent of the ANG tanker units participating in Cycle 2. Additionally, partially mobilized ARC personnel have been deployed to fill critical AF shortages both overseas and CONUS, in areas such as security forces, communications, civil engineering and intelligence.

Rapid technology changes have significantly impacted our defense capability. In order to stay effective and relevant, the ANG must continue to integrate new technologies into our legacy and new weapon systems, while leveraging innovative acquisition strategies. To accomplish this task, we identify, test, evaluate, and acquire combat enhancements for ANG aircraft and equipment at the ANG/Air Force Reserve Test Center (AATC), Tucson International Airport (IAP), AZ. The ANG modernization goal is to be in “lock step” with the AF, leveraging existing AF and joint programs whenever possible. Staff integration at the Major Command (MAJCOM) level, ANG/AFRC/AF partnerships in a myriad number of programs, and the seamless interoperability at the unit level insures the highest state of readiness.

The NGREA is an essential component of the ANG’s modernization program. Using Congressional language for budget guidance, the ANG leverages relatively small amounts of NGREA money with innovative acquisition business strategies to enhance combat capability. NGREA funding provides low-cost, yet significant, increases in combat capability for the Total Force. NGREA is a modernization success story for the ANG.

Finally, the AF recognizes that organizational change is necessary to operationalize transformations in technology and concepts. With decreasing force structure and increasing OPTEMPO, the AF relies more heavily on the Guard and Reserve. In order to further integrate Active, Guard and Reserve forces into one seamless force, the AF unveiled *Future Total Force*. The *Future Total Force* program is a transformational initiative aimed at more efficiently utilizing AF resources from the Active, Guard, and Reserve to maximize capability. The Blended Wing concept, initiated with the JSTARS mission, is an effort to meld the best of what the ANG and the AF can offer.

(2) Status of Equipment: The following paragraphs synopsise the Major Items of Equipment (MIE) within the ANG and the ongoing efforts to upgrade and modernize the force. *Table 1* contains a major item inventory for all ANG aircraft for fiscal years 2001 through 2007. The average ages of ANG aircraft are listed in *Table 2*. The compatibility between the current equipment in the ANG and the AC is discussed in further detail in paragraph (c), maintenance issues in paragraph (d) and modernization programs and shortfalls in paragraph (e) by specific weapons system.

(a) Equipment On-hand

1. Fighter / Attack / Bomber Aircraft

a. F-16 A/B/C/D Fighter Aircraft: The ANG has over one third of all of Combat AF (CAF) F-16 aircraft in 28 squadrons. These aircraft range from the older F-16A/B model to the more capable F-16C/D, Block 52.



**F-16 Over Monticello**

*Block 25/30/32*: The majority of ANG F-16 aircraft are the Block 25/30/32 aircraft type. This block of aircraft has the Embedded Global Positioning System Ring Laser Gyro Inertial Navigation Unit, Countermeasures Management System (CMS), Night Vision Imaging System (NVIS), and Tactical Data Link as part of the trend-setting Combat Upgrade Plan Integration Details (CUPID) Program. These aircraft have experienced a dramatic increase in combat capability with the integration of CUPID and Litening AT targeting pod, a total force approach to precision attack. CUPID was originally funded through NGREA and subsequently received AF program funding. The ANG has supported increased funding in the FY 2004 budget for the Color Multifunction Displays, which are funded through an AF approved program for Block 40/42 aircraft. The Block 25/30/32 aircraft, equipped with targeting pods and CUPID, will be as combat capable as any F-16 in the AF inventory. The Falcon Structural Augmentation Roadmap (Falcon STAR) modifications are currently funded for FY 2004 production start and are required for the airframe to support the increased demands of AEF and precision attack requirements. The Block 25/30/32 fleet is capable of employing GPS-aided munitions such as the Joint Direct Attack Munition (JDAM).

*Block 42*: The Block 42 aircraft is equipped with GPS navigation capability and until recently, primarily employed the low altitude Navigation and Targeting Infra-red for Night (LANTIRN) targeting pods (precision strike). The Common Configuration Improvement Program (CCIP) will field Link 16 data link, color displays, AIM-9X capability and a variety of other programs beginning in FY 2004. As an interim Link 16 capability, the ANG is funding the AF standard Improved Data Modem and NVIS with NGREA and AF funding assistance. The standard Inertial Navigation Unit was replaced with the Ring Laser Gyro in FY 2002. Finally, the Block 40/42 Operational

Requirements Document identifies a need for an “increased performance engine that provides a 20 percent to 30 percent thrust increase along with improved reliability and maintainability.” The carriage of both LANTIRN pods and munitions significantly degrades the aircraft performance with the current F-100-PW220 engines. The ANG requires 63 F-100-PW-229 engines for these aircraft. Installation of these engines in ANG Block 42 aircraft will dramatically increase combat capability and performance. The Block 40/42s have begun to receive the Multi-Functional Information Distribution System (MIDS) Low Volume Terminal (LVT-1) data link to provide full connectivity to the Link 16 networks now in place worldwide in all contingencies to include Operation NOBLE EAGLE, OIF, and OEF. Programmed improvements will keep ANG aircraft fully capable of meeting its AEF requirements.

*Block 52:* The Block 52 fleet began receiving CCIP (including NVIS) in FY 2001. The ANG has reached Initial Operational Capacity (IOC) with the HTS. The Block 52s have begun to receive the MIDS LVT-1 data link to provide full connectivity to the Link 16 networks now in place world-wide in all contingencies to include Operation NOBLE EAGLE, OEF, and OIF. These are crucial combat capabilities in high demand by all war-fighting commanders.

b. A/OA-10 Attack Aircraft: The venerable A/OA-10 is most noted for its Close Air Support (CAS) mission. This aircraft is capable of operating from austere locations and is the only airborne Forward Air Control platform in the AF inventory. The six ANG squadrons account for 30 percent of the CAF A-10 inventory. All A-10 units are currently equipped with NVG and NVG compatible lighting. The A-10 is scheduled to be equipped with a new fire control computer, cockpit displays, and aircraft software to allow the aircraft to support a tactical data link, laser-guided munitions, Joint Direct Attack Munitions (JDAM), and a targeting pod. This program, called Precision Engagement, will be a multi-year program and is fully funded. As funds are made available, the program will be structured in a similar manner to the current F-16 CUPID program to provide increased mission capability and greater effectiveness on the battlefield. Funding for this program is a combination of AF and NGREA dollars. Other improvements to the A/OA-10 include the Countermeasure Sets (CMS) program for enhanced aircraft survivability and the Lightweight Airborne Recovery System (LARS), which will give range and more accurate bearing to downed aircrews equipped with the PRC-112b and Combat Survivor Evader Locator (CSEL) survival radio, greatly enhancing the A-10 Combat Search and Rescue (CSAR) mission.



A/OA-10

The A/OA-10 is documented as having serious thrust deficiencies in its medium altitude operational environment. Tasking in the last several conflicts has migrated from

low altitude (the design criteria of the aircraft) to medium altitude. In order to meet the tasks of war-fighting units, CCs have to reduce fuel loads, schedule take-off times for early morning hours and, at times, refuse mission taskings that increase gross weights to unsupportable limits in high-density altitude environments. For the last five years, the ANG/AFR Reserve Weapons and Tactics Conference has noted engines as their number one priority for the A-10. Future viability as a full force team player is dependent on adequate thrust and maneuverability in a maximum gross weight configuration.

c. F-15 A/B/C/D Air Superiority Fighter Aircraft: The ANG has all of the CAF F-15 A/B combat coded fleet in six squadrons. While the ANG has a predominantly A/B fleet, the 173<sup>rd</sup> Fighter Wing (FW), Kingsley Field, OR, differs with a combination of B, C and D model aircraft. The A/B model aircraft are tasked for the Air Superiority and Continental Air Defense missions and take part in the AEF rotation while the 173<sup>rd</sup> is tasked as a Flying Training Unit (FTU). All F-15 aircraft, to include the ANG, are currently being equipped with the MIDS Fighter Data Link (FDL). This upgrade gives ANG F-15 aircraft state-of-the-art situational



**F-15**

awareness capability and common employment capability with the AF F-15 fleet. FDL is currently installed in all of the combat coded units. The installation for the training units will be completed by October 2003. All units are currently equipped with NVGs and have fielded a temporary NVIS cockpit lighting modification. This modification is currently being modified with a permanent solution that will be completed at the unit level by March 2004. Several combat enhancements are in the works for the F-15. The Bottom Launcher (BOL) Countermeasures Dispenser infrared (IR) has been approved for procurement which will give the aircraft added protection from potential IR missile threats. Current focus is on upgrading the F-15's ability for enhanced Combat Identification and Congressionally-mandated Mode 5 and S capability through procurement of an Air-to-Air Interrogator (AAI) and an Identification Friend or Foe (IFF) system. Other programs include upgrading the current unsustainable cockpit recording system with an Interim 8mm Recording System that will allow the recording of 3 channels of video versus the 2 that the F-15 currently records. Future programs in the works include Joint Helmet Mounted Cueing System (JHMCS) and a Digital Radar Warning Receiver (RWR).

## 2. Air Refueling Aircraft

KC-135E/R Air Refueling Tanker Aircraft: The ANG's air refueling tanker force represents 58 percent of the total force's refueling aircraft in 23 squadrons. Tankers extend the range of airlift and combat aircraft by enabling these planes to be refueled in flight. The AMC, on behalf of the ANG, is working GATM upgrade programs for the KC-135 fleet. Additionally, the ANG is re-engining its

KC-135E aircraft to the KC-135R configuration with monies received from Congressional adds, extending its combat radius and fuel offload capability. Currently the AF is evaluating a possible lease arrangement for a replacement tanker aircraft. If the AF leases or buys replacement tankers, the ANG plans to receive KC-135Rs from the AC tanker force structure and retire KC-135Es. The desired end-state of the ANG KC-135 force structure is a common fleet of KC-135R aircraft. Currently in the planning stages is a design to accelerate the cascade of 48 KC-135R models to the ARC to replace 61 KC-135E models.



KC-135

### 3. Airlift Aircraft

a. C-5A Strategic Airlift Aircraft: The ANG's C-5As at the 105<sup>th</sup> Air Wing (AW), NY ANG, comprise over 10 percent of the entire C-5 airlift fleet. The reliability of the A model continues to be a concern. Two major modification programs now in work or soon to be implemented significantly improve the C-5's reliability, maintainability, and availability. These programs include the RERP and the AMP. AMP is planned for all C-5 aircraft, although not fully funded. Modifications should be complete in the FY 05-07 timeframe, depending on funding. RERP is also planned for all 112 aircraft, but A model modifications do not begin until 2011. If AMC gets approval for its 222 engine buy initiative for C-17s, all A models will be retired, and the ANG will accept AMP or RERP B-models.



C-5

b. C-141C Strategic Airlift Aircraft: Air Mobility Command (AMC) identified a core of 62 ARC/C-141C aircraft that will remain in the inventory through FY 2006. They will remain an integral part of the strategic airlift forces until the C-17 is fully fielded. The core 62 aircraft, which includes 15 ANG aircraft in two squadrons, received four concurrent modifications required to keep them flying until the C-17 transition is complete. The modifications included the All Weather Flight Controls System, the GPS Enhanced Navigation System, the Fuel Quantity Indicating System, and the Defensive Systems package providing missile warning and countermeasures dispensing. Additional safety modifications, incorporated in the C-141, include the Traffic Alert and Collision Avoidance System II and the Terrain Avoidance Warning System.

c. C-130 Theater Airlift Aircraft: The ANG comprises 43 percent of the C-130 tactical airlift capability of the AF. The ANG C-130E/H fleet is dispersed across 25 units or roughly one-third of ANG flying units. The ANG is working with Congress and AMC to obtain upgrades such as the Low Power Color Radar (APN-

241), Large Aircraft Infrared Countermeasures (LAIRCM), and Electronic Propeller Control System upgrades for our fleet. We are also fully engaged with the C-130 AMP. Eight C-130Js have been delivered to the 135<sup>th</sup> AW, MD ANG. There are currently ten C-130Js on contract for the ANG; three for the 143<sup>rd</sup> AW, RI ANG; two for the 146<sup>th</sup> AW, Channel Islands, CA; and five EC-130Js for the 193<sup>rd</sup> Special Operations Wing (SOW), PA ANG.



**C-130**

The FY 2002 Appropriations Bill included funding for one additional aircraft for the 193<sup>rd</sup> SOW and two aircraft for western states fire-fighting in the ANG, with bed down with the 146<sup>th</sup> AW, CA ANG. There are currently five additional CC-130Js, an extended version of the C-130J that can carry two additional pallets or 46 more troops, fielded at two other airlift units; three at the 143<sup>rd</sup> AW, RI ANG, and two for the 146<sup>th</sup> AW, Channel Islands, CA. Beginning in FY 2004, the C-130 community will begin a planned fleet reduction of five aircraft per year until reduction goals are met. This plan is still subject to further modification.

#### 4. Intelligence, Surveillance and Reconnaissance (ISR) /

##### Electronic Warfare

a. E8-C JSTARS: The JSTARS is a long-range, air-to-ground surveillance system designed to locate, classify and track ground targets in all weather conditions. While flying in friendly airspace, the joint Army-AF program can look deep behind hostile borders to detect and track ground movements in both forward and rear areas. It has a range of more than 150 miles (250 km). These capabilities made JSTARS effective during Operation NOBLE EAGLE, OEF and OIF. All E-8C aircraft transferred to the ANG on 1 Oct 2002 and reside with the 116<sup>th</sup> Air Control Wing (ACW), Robins AFB, GA. The 116<sup>th</sup> ACW is the result of the first time employment of the “Future Total Force” concept. This concept results in a “blended” wing comprising active duty and ANG personnel. Current forecasts are for a long-term end strength of 19 JSTARS aircraft; however, this is beyond the FYDP, hence planning is for 17 aircraft only.



**JSTARS**

b. EC-130E Electronic Warfare Aircraft: This Psychological Operations aircraft is scheduled for conversion to the new EC-130J model. This conversion transfers the EC-130E Special Mission Equipment to the new EC-130J Commando Solo mission. Currently, three basic airplanes have been delivered and two

more are on contract for the 193<sup>rd</sup> SOW, PA ANG. The contract for transfer of the Special Mission Equipment was awarded in September 2000.

c. SENIOR SCOUT: SENIOR SCOUT is an airborne tactical signals intelligence (SIGINT) collection system designed to provide near-real-time communications intelligence and electronic intelligence across the spectrum of conflict. The centerpiece of the SENIOR SCOUT system is a palletized shelter containing collection, processing, and communication equipment that is uploaded into a modified C-130 aircraft (Super E or H1/2). The total system is comprised of the equipped shelter, antennas, and associated aircraft modification kits. Rapidly deployable and low profile, SENIOR SCOUT provides a timely, tailored, worldwide SIGINT collection capability to satisfy national, theater, and special operations requirements. SENIOR SCOUT systems are operated and maintained by the 169<sup>th</sup> Intelligence Squadron of the Utah ANG. Both ANG and active AF C-130s carry SENIOR SCOUT. The SENIOR SCOUT program, including system modernization, is funded through FY 2009. Joint Tactical Information Distribution System (JTIDS), special signals enhancements and cellular improvements, Manual Electronic Intelligence capability, Network Centric Cooperative Targeting, Demand Assigned Multiple Access, and Common Data Link (CDL) enhancements are planned for the out years.

d. SCATHE VIEW: SCATHE VIEW is the designated program for a quick reaction roll-on/roll-off imagery capability flown on modified C-130E/H aircraft. Within the ANG, the SCATHE VIEW mission equipment is operated by the 152<sup>nd</sup> Intelligence Squadron and carried on modified 152<sup>nd</sup> AW C-130s. The Nevada ANG has eight modified C-130H2 aircraft and three SCATHE VIEW turret systems (balls). These imagery systems and aircraft are embedded in the Nevada ANG and United States Air Forces-Europe as Keen Sage. The SCATHE VIEW system consists of a modified C-130 aircraft with an externally attached turret providing FLIR, daylight color TV, spotter scope, and laser range finder. The aircraft carries a roll-on/roll-off, full-pallet Airborne Sensor Control Station (ASCS), comprised of FLIR controls; a monitor; a photo-thesis terminal, Situational Awareness Display System (and UHF / Satellite Communications (SATCOM) digital / voice communications). Two airborne analysts operate the ASCS for onboard exploitation and dissemination to a deployable ground receiver station. The ANG is pursuing with Congress system modernization/upgrade to provide data and full motion digital or mosaic still imagery to deployable ground station equipment within the target area.



**C-130 w/ SCATHE VIEW**

e. F-16 Theater Airborne Reconnaissance System (TARS): This digital electro-optical system is the only AF high-speed penetrating reconnaissance asset. It is capable of covering 2,880 NM<sup>2</sup>/Hr. The 192<sup>nd</sup> FW, Richmond, VA, and the 127<sup>th</sup> FW, Selfridge, MI currently employ it. The 115<sup>th</sup> FW, Truax Field, WI, has been designated as the next unit to receive TARS. Two pods are being upgraded to provide a near real-time data link, solid-state recorder and Synthetic Aperture Radar (SAR). One pod will retain the EO sensor while the other



**F-16 Over Richmond, VA**

receives the SAR. Evaluation of these capabilities will take place during FY-04. The upgrades will provide the Joint Force Air Commander with responsive day, night and all-weather reconnaissance capabilities, and make this system a full player in time sensitive targeting of mobile and re-locatable targets.

f. The AF Distributed Common Ground System (DCGS): DCGS is a family of systems providing multi-site, multi-intelligence collection and processing operations servicing data from U-2, UAVs, the TARS, Eagle Vision and other ISR systems. The ANG is a full participant in both signals and imagery Processing Exploitation and Dissemination operations. ANG Intelligence units (169<sup>th</sup> IS UT ANG, 152<sup>nd</sup> IS NV ANG, 123<sup>rd</sup> IS AR ANG, 117<sup>th</sup> IS AL ANG), although part of AF DCGS, lack adequate funding for Digital Transit-case Systems and Senior Year Gateway equipment and communications connectivity and sustainment needed to provide the crucial reach-back support to the air component war-fighter during crisis and contingency operations. Without acquisition and sustainment funding, ANG DCGS elements cannot effectively be a total force participant in providing theater and air component commanders with operational intelligence being linked from diverse ISR asset inputs to DCGS architecture. ANG systems must keep pace with active component systems or they will not meet DoD and AF compatibility standards.

## 5. Special Airlift Mission Aircraft

a. LC-130 Polar Airlift Aircraft: Ski-equipped aircraft support airlift operations to cold weather areas where other airlift aircraft cannot operate. The 109<sup>th</sup> AW, NY ANG, has 11 C-130 aircraft. Seven are LC-130 ski equipped and four are standard wheeled C-130s. Four of the LC-130s are owned by the National Science Foundation and operated by the 109<sup>th</sup>. The LC-130 aircraft have the unique ability to operate from unimproved, deep field, open snow areas using Jet Assisted Take-Off (JATO) solid fuel rocket motors for additional thrust. Since the old JATO inventory is nearly exhausted, a requirement for new replacement JATO motors, which meet current environmental and safety regulations, has been approved. When funded, development can begin as soon as possible. Additionally, these aircraft have been

modified with the APN-241 Low Power Color Radar and Electronic Flight Instrument System Suite.

b. C-38A Special Airlift Aircraft: The C-38 Gulfstream G-100 business jet was chosen to replace four C-21 aircraft. The first two C-38 aircraft were delivered to the 201<sup>st</sup> Airlift Squadron, DC ANG, Andrews AFB, MD, in the third quarter of FY 1998. With only two aircraft available, the squadron is not at full mission capability; as a result, it is difficult to ensure consistent airlift support. Two more C-38s are needed to bring the unit to full mission capability and ensure effective use of the aircraft.

c. C-22 Special Airlift Aircraft: The C-22 fleet provided long-range worldwide transport of AF, DoD senior officials, foreign dignitaries, and legislative and executive branch members. The last of the C-22s will retire this year and are being replaced by the C-40Cs.

d. C-40C Special Airlift Aircraft: The C-40 (military designation for the 737 Boeing Business Jets) replaced the C-22 and now fulfills the requirements for the 40- to 70-passenger jets with long-range capability for worldwide transportation of AF, DoD senior officials, foreign dignitaries, and legislative and executive branch members. The ANG currently operates two unmodified aircraft. The first fully modified and militarized aircraft is scheduled for delivery in September 2004.



C-40C

The existing aircraft will then receive configuration updates in order to bring them up to final configuration. In order to ensure effective flight operations, the requirement is for four aircraft. One additional C-40C (the fourth) aircraft is required.

e. C-21 Special Airlift Aircraft: The ANG operates two C-21 aircraft at the 200<sup>th</sup> Airlift Squadron, Peterson AFB, CO. These aircraft transport high-level DoD personnel to various CONUS locations. All maintenance and upgrades are managed by the Oklahoma City Air Logistics Center and the aircraft are maintained as part of the AF's C-21 fleet. An additional two aircraft are desired to improve flight operations at the unit.

## 6. Rescue Aircraft

a. HH-60 Helicopter: The new engines have 20 percent more power providing a greater margin for safety on hot days and at high altitude. This program was completed in September 2001. The Self-Protection System (SPS) provides a missile warning system and countermeasures dispensing system for chaff and flares. Additionally, an ARC-210 radio will be installed to provide SATCOM capability. This

program began installations in FY 2001 and will continue through FY 2004. To remain compatible with the theater command and control networks, HH-60 requires immediate installation of a tactical data link. Finally, a defensive armament upgrade is required to correct a critical limitation of current defensive weapons. The selected FN M3M .50 caliber machine gun is a cost effective, high rate of fire, defensive weapon.



**HH-60G**

b. HC/MC-

130 Aircraft: A low-cost NVIS Compatible Lighting System modification is in the contract phase for the CAF rescue fleet. A Personnel Locator System will be installed on Kulis, AK, and Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew members equipped with the PRC-112 survival radio. A FLIR program was funded for the HC-130 fleet for FY 2001. FLIR is currently being installed and will be complete by 2<sup>nd</sup> Quarter FY 2004. A SATCOM program was planned for installation in FY 2002. The ANG received four MC-130P Combat Shadow aircraft in FY 2000 at the 129<sup>th</sup> Rescue Wing, Moffett Federal Aviation Facility, CA.



**HC-130**

7. Air Control Systems

a. AN/MPN-26 Mobile Approach Control System (MACS):

MACS is a mobile radar approach control system that will support the United States Defense Planning Guidance requirement for US military forces to be highly mobile and capable of rapid response on a global basis. The AN/MPN-14 presently being used by the ANG was fielded in 1968. Modification took place in 1980, but spare parts have become obsolete to repair failing equipment. The AF has begun an acquisition effort to replace the current radar (AN/MPN-14K).

b. Modular Control System (MCS):

MCS provides deployable tactical command and control for the Joint Force Air Component Commander. This ground-based system works in coordination with the airborne elements to include Airborne Warning and Control System (AWCS) and JSTARS to provide command and control of our AF's. The system consists of TYQ-23 Operations modules and TPS-75 Tactical Radar. Both are 1980's systems that need modernization to meet new threats to deployed forces. A program, the Battle Control System, is in initial

development to replace the MCS and also the aging North American Air Defense Command (NORAD) Air Defense System, the FYQ-93.

c. Air Support Operations Center/Tactical Air Control Party (ASOC/TACP): ASOC's and TACP's are the most forward-deployed elements of the



Air Force Ground Theater Air Control System. These units deploy in direct support of Army combat units, providing planning expertise as the Joint Forces Air Component Commander's (JFACC's) liaison. TACP's also provide final control of air power assets, in particular, Close Air Support (CAS). ASOC's use a variety of communications equipment to provide connectivity throughout the theater and have recently been fielded with the TSQ-209 system with TBMCS functionality. TACP's rely mainly on the MRC-144 Communications system which

consists of a HMMWV based GRC-206 pallet and man-portable radios. TACP's are currently in the midst of a CAF-wide modernization program, which has begun with the introduction of the PRC-117F multi-band, multi-mode radio, providing the first Satellite communications capability for ANG TACP's and the MK-7 Laser Range Finder, which provides mensurated coordinates for such weapons as the JDAM.

## 8. Other Aircraft Systems

a. Modular Airborne Fire Fighting System (MAFFS): The ANG (three C-130 squadrons) is an active participant with the United States Departments of Agriculture and Interior fighting fires that threaten our forest resources. MAFFS, the current system, is a roll-on/roll-off platform that carries 3000 gallons of retardant used in fighting forest fires. The retardant is discharged on unburned forest to slow the spread of the fire. MAFFS is 30 years old and is reaching the end of its operational life. MAFFS was scheduled for decommissioning by the US Forest Service after the 2002 fire season. Congress has appropriated \$16M for replacement of this system. The ANG Requirements Division (ANG/XOR) and the US Forest Service are currently procuring the Airborne Fire Fighting System (AFFS). The contract was awarded in November 2000. This "state-of-the-art" system will provide increased capability for fighting woodland fires. Delivery of the first production model is expected in December 2003. A total of eight AFFS units will be purchased.



**MAFFS**

b. C-26B Counter Drug Aircraft: Aircraft upgrades to the C-26B involving the Wescam 14QS turret began in FY 98 and were completed in FY 99. In

addition to the quad sensor turret, the upgrade included a sensor controller operating system upgrade, touch-screen technology, emergency battery backup, Wulfsberg AM / FM/ HF/VHF/UHF radios, and fire detection / suppression for the sensor pod. A BAE systems 85-megapixel electro-optical camera upgrade modification was completed in June 2002, adding digital imagery capability to the C-26B mission. Included were street level mapping software and a Flat Screen Display replacing the Barco 20" monitor. In FY 03, three aircraft were modified with secure SATCOM, AAR-47 MAWS, ALE-47 flare dispenser, level III ballistic protection, KY-58, and Mode 4. These aircraft were retrofitted to meet OCONUS tasking requirements. Finally, vendor demonstrations and a field study were conducted by Georgia Tech Research Institute (GTRI) for streaming video downlink capability in February 2002.

(b) Average Age of MIE: Overall the average age of aircraft MIE within the ANG is about 23 years. However, the E-8C airframe has an average in-service age of over 34 years. All of the prior year flying hours were consumed in heavy use commercial aircraft with varying standards of maintenance due to ownership by commercial airlines outside the United States. The P-4 fire fighting vehicles (30+ years) and air control radars (45+ years) on-hand are even older. A complete list of the age of ANG aircraft is located in ANG *Table 2*.

(c) Compatibility of Current Equipment with AC: Compatibility problems exist between ANG and AC equipment in the following areas:

1. F-16A/B (Block 10/15): The components of these aircraft are no longer compatible with the AC's newer aircraft and require special logistical support. These ANG F-16s also lack precision attack capability and electronic warfare compatibility with AC capabilities. Additionally, Congress mandated that no funds be obligated to modify aircraft not equipped with GPS after FY 2005. The ANG uses F-16A/Bs to support Foreign Military Sales (FMS) training of foreign pilots. No funds are available for a GPS modification, and since ANG expects to continue the FMS training program for the foreseeable future, continued modification of these aging aircraft is in jeopardy.

2. F-15A/B: The F-15 A/B combat coded fleet in the ANG has substantially less capability than the upgraded F-15 C/D combat coded fleet in the AC units. The radar on the A/Bs is the APG-63, the original radar for the F-15. The AC fleet is being upgraded to the V(1) and V(2) versions. The upgrades address maintenance and reliability issues, supportability issues, and add significant performance enhancements. The ANG aircraft suffer an ever-increasing challenge to keep the old radars operating, even with lesser capability. The F-15A/B aircraft are equipped with the F-100-PW-100 turbofan engine, the earliest production configuration engine, which has become difficult to maintain and support. The electronic countermeasures (ECM) capabilities of the A/B are clearly inferior to the C/D models. The ALR-56A has minimal support from the Systems Program Office to include combat reprogramming capability to meet theater specific threats. An old, slow processor degrades the effectiveness of all of the subsystems in the ECM suite. The AC will receive the JHMCS for high off-boresight

targeting of the AIM-9X, critical to the within-visual-range arena, in the near future. The ANG A/B models are not scheduled to receive the JHMCS. The AC fleet has new flight simulators with full system visuals and the latest aircraft modifications. The ANG has the older, less effective Full-Mission-Trainers. The ANG has demonstrated its desire to increase their combat effectiveness by pioneering and investing in several subsystems for the AC up to a full operational test and evaluation. The systems include the BOL, an advanced IFF/AAI, and new digital recorders. As the F-22 fields, all ANG F-15 A/Bs will be replaced with F-15 C/Ds cascaded from the active AF with the capabilities detailed above.

3. KC-135E: The engines on the KC-135E models are becoming less reliable and maintainable and do not provide the improved performance found in the KC-135R model. The inferior aircraft performance restricts refueling off-loads and potential usable runways for the ANG E models versus the active duty R models. Current plans call for cascading 48 KC-135R models from the AC to the ARC in FY 2004 through FY 2006. Thirty-two will go to the ANG and the remainder (16) will go to the AFRC. At the same time, 67 KC-135E models will be retired, and the savings used in part to fund an engine strut replacement program for the remaining E-models. By FY 2004, the ANG is scheduled to have 78 KC-135E and 126 KC-135R aircraft.

(d) Maintenance Issues: The F-16A/B series fighters are no longer considered combat deployable and system age is significantly affecting supportability and mission readiness. Only one combat-coded F-16A unit exists and it will be upgraded to the F-16C as soon as aircraft become available. Three Block 42 F-16 units maintain LANTIRN precision targeting capability only by sharing one unit's complement of LANTIRN pods and support equipment. The lack of the requisite support equipment and full complement of LANTIRN pods impacts the overall deployment ready status of precision targeting assets.

The KC-135 suffers from GATM non-compliance, and the KC-135E variant can no longer meet global environmental standards. Corrosion and structural problems severely affect the ANG's C-5 fleet. Air defense Regional and Sector Air Operations Center data processing capabilities are also becoming inadequate at the operations centers.

The JSTARS aircraft still have the original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission. Other future aircraft modifications include GATM and a replacement of the Class 2 JTIDS with MP-CDL in the FY 2008-2010 timeframe. The added inspections and associated workload done to support the aging aircraft program, of which the E-8C is part, is significant. Due to these aircraft having been acquired from a variety of commercial sources well into their lifespan, there are significant corrosion and structural inspections that must be performed that would not be required for newer aircraft. For example, the increased maintenance costs for corrosion control inspections done during Programmed Depot Maintenance make up almost 75 percent of the total workload for the inspection.

The MPN-14K radars are well beyond their planned service life, having long passed their point of economical sustainment, and now experiencing excessive downtime and unacceptably low rates of operational availability. Although some upgrades have been made to the more than 45-year old equipment, currently there are no spare parts available with which to replace failing equipment.

(e) Modernization Programs and Shortfalls: The ANG's modernization program revolves around the CQ and the requirements for a robust and capable force. *Table 8* highlights the ANG's current top ten Unfunded Priority List. Greater detail on specific programs is provided below:

1. F-16/A-10 Targeting Pods: Aircraft capabilities are greatly reduced without targeting pods and the ANG cannot fulfill Combatant Commanders need for precision tasking. The pod that is ultimately acquired must possess exceptional standoff capability outside of most surface-to-air threats, 3<sup>rd</sup> Generation FLIR, Laser Spot Track (LST), and superior capability for targeting J-Series weapons as well as emerging technology insertions. The pod will maintain a high Fully Mission Capable rate and support AF two-level maintenance.

2. Accelerate A-10 Precision Engagement: This program fields a data link, avionics suite, and precision strike capability for the A-10 fleet. Upon completion, this program greatly enhances a pilot's situational awareness and increases the ability to process and display multiple sources of information in a clear and understandable manner.

3. F-16 Fighter Aircraft: The F-16 fleet requires continued modernization to sustain combat capability. One of the most significant issues is force structure. Attrition reserve is being depleted as new procurement has essentially halted pending F-22 and F-35 Joint Strike Fighter (JSF) deliveries. Also, multiple programs were initiated to pursue upgrades necessary to overcome diminished manufacturing sources, decreased reliability and sustainability, and an increased requirement for processing capability. These programs include the Heads Up Display (HUD) Advanced Electronics Unit (AEU) and the Modernized Programmable System Processor. Continued modernization efforts include the Advanced IFF, color displays, Military Standard (MIL STD) 1760 wiring, and the JHMCS.

4. F-15 AAI/IFF: Provides improved onboard ability to positively identify aircraft as friendly or hostile. Lack of a capable and/or robust electronic identification capability severely degrades the combat capability and survivability of the aircraft in both Homeland Air Defense and contingency operations. By fiscal year 2004, the current AAI system will be unsupported.

5. C-130 APN-241 Radar: The current radar installed on C-130 E/H aircraft is suffering from deteriorating reliability, maintainability, and sustainability (RM & S). The APN-241 has the flight safety-enhancing capability of wind shear

prediction, demonstrated 1,000 hours mean time between failure, and is certified for all-weather precision airdrop, a critical shortfall in current fielded mission capability.

6. F-16 Advanced Identification Friend/Foe (AIFF): AIFF provides the F-16 Block 25/30/32/40 fleet with an essential ability to identify friendly aircraft when employing beyond visual range weapons while avoiding friendly-fire disasters—critical for homeland defense and deployed operations. This interrogator capability allows the F-16 to meet rules of engagement restrictions for the employment of the Advanced Medium Range Air-to-Air Missile (AMRAAM) and fulfills the requirements of the F-16 Common Configuration Implementation Program (CCIP).

7. C-130 LAIRCM: Allows Combat Delivery aircraft to survive in an environment of increasing threat complexity and lethality. The system uses a laser beam to defeat shoulder fired infrared missiles, and does not rely on hazardous and politically sensitive expendables, which highlight the aircraft to additional threats. AMC has funded LAIRCM for eight active duty aircraft but has not funded any systems for ANG aircraft.

8. HH-60 Defensive Armament (.50cal gun) Upgrade: Fixes a critical limitation of the current defensive armament to provide adequate protection during CSAR missions. The aircraft is unable to provide defensive firepower beyond approximately 800 meters with its current weapons. Supporting fighters can employ special ordnance no closer than 1000 meters from the helicopter. This leaves a gap in defensive capability that makes the helicopter vulnerable to ground fire from widely proliferated former Soviet-bloc manufactured heavy machine guns with a range of 1500 meters. The rate of fire provided by the .50cal has proven effective in suppressing this enemy threat.

9. F-16 –229 Re-engineing: Block 42 aircraft are currently equipped with the Pratt & Whitney –220 engine. With current and future combat configurations, these aircraft are significantly underpowered, resulting in ANG pilots flying at higher risk in combat operations. The Block 42 aircraft cannot conduct LANTIRN missions. The engine upgrade increases performance and allows conduct of LANTIRN missions.

10. F-15 –220E Engine Kits: Current –100 engines are the earliest designed production configuration and have significant operational limitations due to age. The upgrade kit will increase readiness, safety, reliability, and maintainability of the fleet while improving performance and cost effectiveness. The upgrade kit gives the aircraft equivalent capability of current production models.

(f) Overall Equipment Readiness

1. Aircraft: Although ANG weapon systems are often older generation, aircraft are generally in a mission ready, deployable condition. In large part, this is due to the excellent maintenance professionals in the ANG. However, because of

capability shortfalls with older equipment, some aircraft are not considered fully mission capable by the theater Combatant Commanders for deployment to their area of responsibility. This mission shortfall is primarily due to a lack of precision weapons engagement capability. That is why modernization of older F-16 Block aircraft, for example, is a priority for the ANG.

2. Other Equipment: Air traffic control and approach control facilities, while still functioning, are generations behind the state-of-the-art in their design. In addition, again due to the age of the equipment, the logistics tail for some equipment is now inadequate, awkward, overly expensive or non-existent. The Air Defense System is estimated to be unsupportable by FY 2009.

(g) Other Equipment Specific Issues

1. New Missions: Several new missions have been assigned to the ANG in recent years while others have been expanded.

F-15C pilot training for ANG and AC pilots is currently being conducted at the 173<sup>rd</sup> FW, Kingsley Field, OR. This mission will continue to grow as the active AF transitions to the F-22. F-16 pilot training for the ANG, AC and allied air forces has been conducted at the 162<sup>nd</sup> FW, Tucson IAP, AZ, for many years. In FY 2004 the unit will begin training in F-16 Block 60 aircraft. The ANG has now added two additional FTUs at the 149<sup>th</sup> FW, Kelly Field, TX, and the 178<sup>th</sup> FW, Springfield, OH. This mission will continue to grow as the AF begins fielding the F-35. The ANG now has a total of four fighter FTUs comprising some six squadrons and the 189<sup>th</sup> AW with one C-130E airlift squadron.

The ANG's role within AF Space Command (AFSPC) is in the process of significant growth. Six space units are currently activated or going through transition. The 137<sup>th</sup> Space Warning Squadron (SWS), located in Greeley, CO, provides immediate, worldwide missile warning and space launch detection to NORAD, unified commanders, theater CCs, the Joint Chiefs of Staff, and the President and Secretary of Defense. To accomplish this, the unit employs the AF's only survivable, mobile satellite communications ground system linked to Defense Support Program (DSP) satellites. This unit is fully operational. The unit converted in FY 2003 from Defense Satellite Communications System to Military, Strategic and Tactical Relay (MILSTAR) and will undergo another conversion from DSP to Space Based Infrared Radar System in the FY 2009-2010 timeframe. Sixty percent of the unit's 284 personnel are full-time. The 148<sup>th</sup> Space Operations Squadron (SOPS) located at Vandenberg AFB, CA, operates the MILSTAR Operations Center. Designed to be a backup to 4<sup>th</sup> SOPS at Schriever AFB, CO, this unit performs command and control of the MILSTAR constellation of satellites. Nearly 60 percent of the unit's assigned strength of 53 is full-time. The 153<sup>rd</sup> Command and Control Squadron (CACS), located at FE Warren AFB in Cheyenne, WY, is a Mobile Consolidated Command Center (MCCC). The 153<sup>rd</sup> CACS maintains the equipment of the MCCC and is deployable in support of national military objectives. Conversion was completed in December, 2002. More than 50 percent of the unit's

assigned strength of 165 is full-time. The 213<sup>th</sup> SWS, located at Clear AFS, AK, provides tactical warning and attack assessments of ballistic missile attacks against North America as well as provides space surveillance capabilities using phased-array radars. AFSPC will maintain ownership of the facilities and is funding the billets, however all but two personnel on site will belong to the ANG. This unit's manpower is included in the FY 2004 Program Objective Memorandum and will transition over a 5-year period. Ninety percent of their assigned 94 personnel will be full-time. The 114<sup>th</sup> Space Launch Flight, located at Patrick AFB, FL, provides launch support to the Eastern Launch Range. The 119<sup>th</sup> CACS, located in Knoxville, TN, augments USSPACECOM's Space Operations Center by providing exercise, training, and other Command and Control capabilities.

The ANG is also expanded into the command and control arena due to the newly assigned JSTARS weapon system. This is a long-range, air-to-ground surveillance system designed to locate, classify and track ground targets in all weather conditions. While flying in friendly airspace, the joint Army-Air Force program can look deep behind hostile borders to detect and track ground movements in both forward and rear areas. It has a range of more than 150 miles (250 km). These capabilities made JSTARS effective in Operation NOBLE EAGLE, OEF and OIF. Current forecasts are for long-term end strength of 19 JSTARS aircraft; however, this is beyond the FYDP and therefore planning is for 17 aircraft only.

The ANG continues to aggressively expand its efforts in the Information Operations (IO) and Information Warfare (IW) arena with the creation of several specialized units. The Washington ANG activated the 262<sup>nd</sup> Information Warfare Aggressor Squadron to support the Air Force Information Warfare Center (AFIWC). The Kansas ANG will stand up a similar unit at McConnell AFB. In Maryland, the ANG is teaming with the National Security Agency (NSA) to activate the 175<sup>th</sup> Information Operations Squadron (IOS) in support of NSA and NCA requirements. The Vermont Information Operations Training and Development Center is conducting a proof of concept to support the 39<sup>th</sup> IOS, the Air Force's IO schoolhouse. The Rhode Island and Delaware ANG are currently engaged with the Defense Information Systems Agency and the Information Operations Technology Center, respectively, to provide Joint IO support under the RCE-05 JRVIO initiative. The Utah ANG is building an information warfare flight to provide reach back IW planning and execution capabilities to the Air Operations Center at Headquarters, First Air Force. The Texas ANG teamed with AFIWC to enhance its ability to meet critical IW requirements. The 193<sup>rd</sup> Special Operations Wing, PA ANG, continues to perform the COMMANDO SOLO psychological operations broadcasting mission with its EC-130 aircraft. Over a dozen other states have also expressed interest in assuming IW missions. Because of the unique and dynamic nature of this mission area, ANG units activated to support IO/IW requirements will require extensive, state-of-the-art computer, networking and telecommunications equipment, with a higher than normal technology refresh rate.

Although primarily manned by the ARNG, WMD Civil Support Teams (CST) are augmented by ANG personnel as part of the Homeland Defense mission. 32 WMD

CSTs have been established in 31 states to deploy rapidly to assist a local incident commander in determining the nature and extent of an attack or incident; provide expert technical advice on WMD response operations; and help identify and support the arrival of follow-on state and federal military response assets. Another 23 teams were authorized by Congress in FY 2003, bringing the total number of WMD CSTs to 55. Of the 23 new teams, 12 will be established in FY 2004 and the remaining 11 will be established by FY 2007. Each team consists of 22 highly skilled, full-time members of the ARNG and ANG.

The FL ANG established an Associate Unit at Tyndall AFB, FL, to provide flight instructors for Air Education and Training Command's F-15C/D FTU, designated Detachment 1, Southeast Air Defense Sector. This is the only associate unit in the ANG.

The ANG requires the development and deployment of a comprehensive and contiguous synthetic battlespace generation simulation. This future mission growth requirement will enable the ANG to train its war-fighters in threatening environments they are expected to face now and in the future. As such, sufficient funds are needed to procure the range infrastructure necessary to deploy the Force Operational Readiness and Combat Effectiveness Simulation to each of the ANG's Combat Readiness Training Centers. The required range infrastructure improvements, estimated at \$2M, will enable these ANG training assets to expand the battle sphere with inclusion of active data link radios and a constructive battlespace that includes all aspects of the joint environment into which ANG war-fighters must be prepared to deploy and employ. This deployment effort works in harmony with the AF Distributed Mission Training (DMT) initiative to distribute enhanced training to the war-fighter at home station.

2. Electronic Warfare: Near term priorities include sustainment and modernization of electronic attack pods and support equipment, increased situational awareness through improved radar warning receivers, procuring covert countermeasures, integrating self protection systems, and reestablishing an Air Force electronic attack capability.

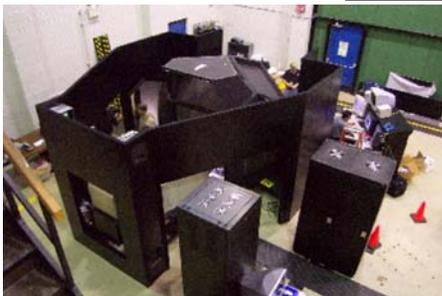
a. Electronic Attack (aircraft self protection): The ALQ-131 Block II and ALQ-184 electronic attack pods are used on over 1300 F-16, A-10, and C-130 aircraft. These pods are the primary protection the aircraft have against radar-guided, air-to-air missile systems. Developed many years ago, both are now experiencing numerous reliability, maintainability and operational shortfalls. The AF has budgeted for a pod improvement program that includes new processors and 1553 data bus communications interfaces for both the ALQ-131 and ALQ-184. Other modifications on the pod improvement roadmap, such as adding digital radio frequency memory, improving receivers, replacing traveling wave tube, and replacing high voltage power supplies, remain unfunded. Upgraded pod-based systems that meet the war-fighter's requirements and are easily moved between aircraft will provide the flexibility and reduced logistics footprint needed for future AEF deployments.

b. Destruction of Enemy Air Defenses: At exercise JEFX '02, a capability to greatly enhance the kill-chain timeline was demonstrated using a modified ALQ-131 called Vulture. An F-16 Block 25/30 aircraft equipped with Situational Awareness Data Link (SADL), Litening II targeting pods, CMS and Vulture, successfully demonstrated time sensitive, accurate geolocation of targets and successful SADL transmissions to other systems to destroy the target. While budgets remain tight, the ANG believes that Vulture should be pursued aggressively as a near-term kill-chain enhancement until other capabilities are fielded in the coming years.

c. Radar Warning Receivers (RWR): The ALR-69 RWR is fielded on most ANG F-16, A-10 and C-130 aircraft. The current ALR-69 system uses *circa* 1974 technology and was initially installed on Air Force aircraft in 1978. Several modifications have been accomplished over the 25-year life of the current ALR-69(V). Based on a multi-command Operational Requirements Document, the Air Force is developing the ALR-69 Capability Upgrade which implements advanced RWR capabilities through the development/incorporation of state of the art digital receiver technologies and special detection/geolocation processing algorithms. Currently the Air Force Special Operations aircraft are budgeted for production of this upgrade. F-16, A-10 and the rest of the ALR-69 fleet need to be funded and equipped with this important capability upgrade.

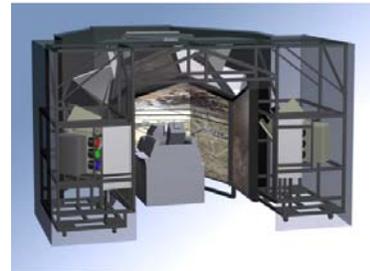
d. Infrared Countermeasures (IRCM) and Dispensers: Most ANG aircraft require a capability to defeat IR-guided missiles. Until missile warning technology is ready for EMD on fighter aircraft so countermeasures can be reliably dispensed reactively, preemptive covert IRCM is needed. The ANG has been on the leading edge of demonstrating and procuring preemptive covert IRCM capabilities for our fighter aircraft. With funds provided by Congress in FY 2001, the Air Force procured the BOL countermeasures system for 118 F-15 A/B aircraft. The A-10, due to some of its unique capabilities, missions and flight profiles, requires longer preemptive coverage than the F-15. Under the sponsorship of ACC, the ANG and AATC have been actively testing and demonstrating the COMET IRCM system for ACC. Based on testing to date, COMET needs to be matured and fielded as soon as possible on the A-10. ANG airlift aircraft, such as the C-130 and C-141, are already equipped or being equipped with missile warning systems and IRCM. But the dispensing of IRCM, covert or otherwise, is not always effective due to aircraft size, proximity to the threat or artificial constraints (e.g. diplomatic agreements or fire hazards). Hence, the AF requires a laser-based countermeasure for these aircraft in the future. Due to funding constraints, the ANG aircraft will continue to have challenges obtaining these important capabilities.

3. Simulators: In FY 2001, the ANG established a Program Management Office (PMO) to coordinate, under ANG/XO guidance, all projects related to Distributed Mission Operations (DMO). Under the PMO, there are two functional organizations focused specifically on reserve component requirements. The Mission Training Engineering Center (MTEC), collocated with



the AF Research Laboratory (AFRL) in Mesa AZ, was established in FY 2003 to coordinate technology programs with AFRL and to act as the engineering focal point for the ARC for leading edge technology innovations. The ANG is currently funding several Advanced Technology Demonstrations as engineering proof of concepts to validate new technology applications. The second organization, located at the 132<sup>nd</sup> FW in Des Moines, IA, is the Distributed Training Operations Center (DTOC). The DTOC, which reached IOC in July 2003, is responsible for all network management, unit DMO scheduling, remote maintenance, remote instruction, and realistic threat insertion.

In FY 2001, the ANG also initiated an ambitious program to modernize the flight training simulators possessed by F-16, A-10 and F-15 units. Recognizing a need for an advanced trainer, the ANG elected to use multiple acquisition and business strategies to mitigate risk and expedite deployment. The overarching requirement is to deploy low-cost, high fidelity, flight simulators that are fully capable of DMO and completely interoperable with the devices being fielded by ACC and other major commands. DMO capable devices will not only be able to train combat ready aircrews in individual skills, but also in team training in a multi-aircraft environment linked locally or, via long haul networking, to other units. By employing common components in hardware and software, where advantageous, the ANG hopes to achieve economy of scale savings in acquisition and life cycle support. The ANG/ARFC/ACC Enterprise Product Team (EPT), using an Intra Governmental Solution (IGS) which partners government, industry, and research centers, uses innovative technology developments to provide a new level of technology in aircrew training. The first devices fielded by the EPT to CAF A-10 units were delivered in FY 2001. Production continues with a final requirement for 19 additional devices. The first two F-15C FMT+ devices were purchased in FY 2003 from Boeing for planned delivery in FY 2004 to the 173<sup>rd</sup> FW at Kingsley Field, OR. The 173<sup>rd</sup> is the F-15 Flying Training Unit for the ANG. In cooperation with ACC and the AFRC, the ANG is developing plans to establish, by FY 2006, three Regional Training Centers (RTC) for F-16 Block 30 training. Each RTC would encompass a four-ship of simulators capable of local and long-haul DMO.



The JSTARS program has validated requirements for a second Weapons System Trainer (WST) and a second Maintenance and Mission Trainer (MMT). Both of these simulators must be fully funded and delivered as early as possible to support conversion training and sustain the JSTARS aircrew force. It was thought that the second WST would be fully funded at \$11M (3600 funding) in FY 2002 but \$4.5M was taken during congressional conferencing. The current funding of \$9M programmed for a second MMT in FY 2004/05 is not sufficient as the estimated cost for this simulator is \$32M (3010 funding) to provide a full up capability and additional funding is needed in FY

2003/04. Other future aircraft modifications include GATM and to replace the Class 2 JTIDS with MP-CDL in the FY 2008-10 timeframe. The aircraft still have the original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission.

The Command and Control Weapon System Part Task Trainer (C2WSPTT) provides inputs to Theater Battle Management Core System (TBMCS) to provide stand alone training capability for Air Operations Center (AOC) crew members. C2WSPTT provides the stimulation needed by the ANG AOC augmentation units to conduct operations training and maintain crew readiness. The system simulates TBMCS by providing realistic feeds such as data links and IRIS messages. The system is currently in use at the AF Command and Control Training and Innovation Group for AOC initial qualification training.

b) Changes Since Last NGRER: There are several significant programmatic changes since the last report. A few new programs have been added. New missions have been included, but the underlying equipping philosophy of the ANG has not changed.

Due to limited precision attack capability, the ANG's participation in subsequent combat operations was reduced. One approach to fix this problem is an aggressive effort to equip ANG Block 30 F-16s with precision targeting pods. There are currently 64 Litening II pods in service with a total end-state requirement of 250 ANG pods. Recently, the Advanced Targeting Pod (ATP) was selected as the total force approach to modernize the CAF.

The FY 2003 NGRER addressed the need for fielding upgraded and modernized flight simulators with DMT capability at Interim Regional Training Centers and the expanding cooperative role with the AFRC.

This year's NGRER addresses the ANG's ongoing initiatives to expand its role in Space and Information Operations Warfare.

c) Future Years Program (FY 2005 – FY 2007)

(1) FY 2007 Equipment Requirements: There are a total of 104 ANG medical squadrons. The paragraphs below detail the major equipment shortages directly impacting on the Guard's Homeland Defense Mission.

The ANG Medical Service requires \$59.5M to purchase 17 Chemically Protected Expeditionary Medical Support 25 bed (CP-EMEDS +25) non-War Reserve Materiel (WRM) assemblages. The ten Federal Emergency Medical Agency (FEMA) regions have ANG medical personnel already configured to provide CP-EMEDS +25



**EMEDS**

equivalent capability. One CP-EMEDS +25 assemblage will be placed in each FEMA region (10 total). One additional assemblage will be placed in each "high risk" FEMA region (6 total). One additional CP-EMEDS +25 assemblage is required as a mobile training set. During the consequence management phase, these assemblages provide critical care capability during a WMD event. These teams and assemblages are capable of responding in support of either a State or Federal response. Each CP-EMEDS +25 costs \$3.5M.

The ANG Medical Service also requires \$1.0M to purchase ten Bioenvironmental Engineering Nuclear/Biological/Chemical (BNBC) assemblages. These assets provide the required materiel to support ten Bioenvironmental Nuclear, Biological, and Chemical Medical Defense Teams (FFGL1). Each FEMA Region has ANG personnel already trained to provide FFGL1 equivalent capability, but lacks available equipment. These non-WRM assemblages will support consequence management of WMD events through NBC detection, assessment, and countermeasure strategies. These teams are capable of responding in support of either a State or Federal response and can complement and expand the capability of the existing NGB CSTs. Each BNBC assemblage costs \$100K.



**BNBC ASSEMBLY**

The ANG Medical Service requires an additional \$3.4M to purchase 20 Patient Decontamination assemblages. These assets provide required materiel to support 20 Patient Decontamination Teams (FFGLB). Each FEMA Region has ANG personnel already trained to provide two FFGLB equivalent capabilities, but lack available equipment. These assemblages will support consequence management of WMD events through expansion of local patient decontamination capability and support to aeromedical evacuation of contaminated casualties. These teams are capable of responding in support of either a State or Federal response. Each assemblage costs \$170K.



**REEVES DECON UNIT**

The ANG F-16 fleet expects continued modernization in FY 2005 and beyond. Enhancements include the APG-68(V)9 radar, digital recorders, the JHMCS, ALR-69

PLAID and advanced simulators. Structural modifications will remain an issue as we fly our jets well beyond the initially designed lifetime.

(2) Anticipated New Equipment Procurements: Funding for procurement of major items of ANG combat and direct combat support equipment is programmed by the AC (to include the needs of the ANG) as required to meet planned total force employment plans. The Congress, in their annual budget appropriation, may also direct additional ANG equipment procurements through NAREA.

Anticipated additions include additional C-40C replacement aircraft for the retiring C-22s. Other ANG procurements are expected to include completion of the installation of the FDL and the purchase of an advanced IFF/AAI system for F-15s.

Three new CC-130J aircraft were fielded at the 143<sup>rd</sup> AW, Quonset Point, RI, and two CC-130J were fielded for the 146<sup>th</sup> AWG, Channel Islands, CA. Five EC-130Js are being procured for the 193<sup>rd</sup> SOW, Harrisburg, PA.

For the F-16, 79 Litening II targeting pods are in service and additional funds are needed to purchase the ATP. In concert with the AC, ATP procurement will round out the 160 pod ANG requirement. When upgraded with GPS, CMS, NVIS, and SADL under the CUPID program, these aircraft will be as capable as any other F-16 in the USAF inventory. Additional unfunded modernization programs include the HUD AEU, Advanced IFF, Color displays, Mil Std 1760 wiring, and the JHMCS. Upgrade of TARS with a minimum of one EO and one SAR-equipped pod together with solid-state recorders and high capacity ABIT datalinks, and one ground station with ABIT data link will allow the Air Force to evaluate the capability of this system to support a real-time targeting environment. Evaluation of the capabilities of the two new pods is anticipated to be done during Roving Sands 05.

KC-135E engine replacement upgrades will also continue as funding permits, following a Congressionally-directed engine replacement program review. Seventy-two KC-135D/Es remain to be upgraded to the KC-135R standard.

The C-17 is the future core airlifter, replacing the retiring C-141. The C-17 provides strategic delivery of cargo, passengers, and patients via airland and airdrop from the CONUS direct to main operating bases or forward operating locations. On 3 Nov 1995, in conjunction with the Defense Acquisition Board's announcement to buy an additional 80 C-17s (120 total), CSAF announced the 172<sup>nd</sup> AW in Jackson, MS, would receive eight of these aircraft. During the FY 2003 Amended Program Objective



C-17

Memorandum (APOM), CSAF approved funding to procure and support 60 additional C-17s (180 total). AMC basing plan provides an eight PAA unit-equipped follow-on mission for Jackson, replacing their retiring eight C-141Cs. Jackson is currently the only ANG base identified for conversion to this weapon system, although several other units, to include existing C-130 bases, are exploring the possibility. Transition begins FY 2004/2, to be completed FY 2005/4.

The ANG anticipates procuring two (2) additional JSTARS platforms to meet mission needs. Additional aircraft to complete the fleet of 17 aircraft will be procured as additional funding is appropriated.

(3) Anticipated Transfers from AC to RC: The F-15C/D is expected to begin transition from the AC to the ANG combat-coded squadrons starting in FY 2005 and extending into FY 2013. Two AC F-16C Block 30 squadrons-worth of aircraft are expected to begin transfer to ANG units during FY 2003. This in turn will begin the transfer of the remaining combat coded F-16A/B aircraft to FMS training or retirement. Additional KC-135R models may be transferred to replace older D/E aircraft. E8-C JSTARS aircraft transitioned to the Guard beginning on 1 October 2002.

(4) Anticipated Withdrawals from RC Inventory: Due to aircraft age and cost to address GATM requirements for worldwide operations, the three C-22s assigned to the 201<sup>st</sup> AS, DC ANG, at Andrews AFB, are being retired. The first aircraft left the inventory in November 2001. The remaining aircraft are scheduled to leave the inventory in December 2002 and December 2003. The replacement aircraft is the C-40C. Additional aircraft to complete the fleet will be procured as additional funding is appropriated.

AMC identified a core of 62 ARC C-141C aircraft that will remain in the inventory as an integral part of the strategic airlift forces through FY 2006 until the C-17 is fully fielded. The core 62 aircraft, including National Guard and Reserve aircraft, received four modifications required to maintain viability until the C-17 transition is complete. C-141s are tentatively scheduled to leave the ANG beginning in FY 2003.

(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2007: The most significant challenge to ANG readiness is that of equipment. The ANG has the oldest aircraft in the AF inventory. Modernization of the fleet to attain equivalent capability and meet the war-fighting Combatant Commander's tasking is critical to a robust and lethal Total Force. Additional details are provided in the following paragraphs.

The A/OA-10 PE Program will replace the armament control panel/inter-station control unit with a digital control mechanism and a MIL STD1760 bus interface which will allow targeting pod employment of precision guided munitions. In addition, the A/OA-10 cockpit will contain color multi-function displays, a tactical data link, and a Hands-On-Throttle-And-Stick to minimize the pilot's concentration focused within the cockpit.

The location of the current antenna installations for the ALR-69 RWR on A-10 and F-16 aircraft provide late warnings of modern air-to-air and surface-to-air threats. Modifications to correct this sensitivity problem have been developed but only partially funded for 274 out of 444 F-16 Block 25/30/42s. One hundred-seventy (170) ANG F-16s still require this change, and 102 ANG A-10s must be modernized.

The JHMCS is a state of the art capability to cue and verify cueing of off-boresight sensors and weapons, including radar, navigation system, and both current and next generation short range missiles. The helmet provides capability for weapons employment to achieve first look, first shot advantage in the air-to-air within visual range combat arena, and provides radar weapon symbology and visual cues of target location. The system will be compatible with F-15 and F-16 aircraft and will ensure the viability of ANG aircraft for the future.

The F-16 CUPID upgrade for Block 25/30/32 aircraft provides for SADL; however, it does not provide an upgraded color display capability. The addition of the Advanced Display Processor and Color Display configuration optimizes utilization, increases aircraft processing capability, pilot situational awareness, and combat survivability and lethality. Four hundred 46 color display sets and processors are required.

The Pylon Integrated Dispenser System (PIDS) universal modification for the ANG's 242 F-16 Block 25/30/32 aircraft has significantly increased their countermeasures self-protection capability. The ANG and AFR together own 310 PIDS. A PIDS universal modification will add the capability for ANG F-16 to employ smart weapons like JDAM.

The HUD AEU upgrade is a crucial upgrade to support the F-16 Block 30 fleet in the future. Originally developed in the late 1970s, the processor of the current HUD AEU is limited and does not meet the required throughput speed necessary to keep pace with the replacement of other avionics. Additionally, the current HUD AEU is adversely affected with diminishing manufacturing sources. A replacement unit is needed to provide necessary memory and processor power to take Block 30 F-16s out to the 2015 timeframe.

In FY 2003, the ANG equipped 42 F-16 aircraft with IFF interrogation capability. The ANG-16 Block 30 fleet consists of multi-role fighters fulfilling Defensive Counter-Air tasking in the EAF as well as Air Defense Force missions in CONUS. The Advanced IFF provides the F-16 Block 30 fleet with an essential ability to identify friendly aircraft when employing beyond visual range weapon systems, thus avoiding "friendly fire" disasters. This modification greatly increases situational awareness and aircraft survivability/viability in multi-role taskings the CCs demand.

The ANG Block 42 F-16 aircraft requires new engines to increase its thrust in order to perform the multiple combat taskings now being assigned. The simultaneous carriage of both LANTIRN pods and munitions significantly degrades performance of the aircraft

with the F-100-PW-200E. A total of 63 new engines, of which 17 have been funded, are required for the ANG's F-16 Block 42 fleet.

The fielding of the FDL opens many new opportunities for improving the capabilities of the F-15. Effective training of pilots in the use of those expanded capabilities is essential to optimize the F-15's employment. An F-15 Advanced Video Tape Recording is needed to fully capture all the expanded training mission data now derived from addition of the FDL. One hundred fifteen ANG F-15s require this capability.

The BOL countermeasure dispenser modification for ANG F-15s will allow the carriage of the MJU-52 covert countermeasure and will provide the aircraft exceptional preemptive and reactive protection from infrared guided missile systems. One hundred-eight ANG F-15 aircraft will receive this BOL dispenser. Improvements to enhance the simple F-15 BOL controls interface to the pilot need to be developed.

HC-130 CSAR aircraft need a FLIR to provide the ability to see through smoke, light fog and rain, permitting crews to operate under the worst of conditions. Ten ANG aircraft require this capability. The modification contract was awarded in August, 2002, with expected completion in FY 2004.

The SADL provides an all-weather, low-cost data link using off-the-shelf Enhanced Position Location Reporting System (EPLRS) radios and provides a major improvement in preventing fratricide during combat operations. In FY 2004, the ANG began to take delivery of the Value ECP hardware upgrade kit to enhance the SADL's ability to exchange J-Series messages through a gateway to and from a Link 16 network. Two gateways are being fielded to provide this interoperability. The Joint Range Extension (JRE) gateway will embed the Transparent Multi-Platform Gateway (TMPG), designed to translate between the SADL and Link 16. As a component of the GTACS, JRE/TMPG will provide a ground-based capability. The Roll-on Beyond-Line-of-Sight Enhancement is a palletized collection of radios designed to provide an airborne gateway capability on any aircraft on which a pallet is compatible. The Smart Tanker program calls for modifying 40 KC-135s and buying 20 pallets for use across the CAF. Tactical data links are needed for 95 ANG HH-60s, and 25 HC-130s. The ANG needs equivalent connectivity to the tactical data link networks across the mission areas to ensure relevancy in the modern battlefields and airspace. The ANG will continue to leverage any Air Force and Joint programs necessary to obtain this combat capability. ANG ranges require 15 SADLs to provide aircrew training.

NVGs provide C-130 aircrews with situational awareness, turn point, landing and drop zone identification, formation positioning and deconfliction, and integration in nighttime battlespace. NVGs are a CC requirement for 24-hour operations. Ten ANG C-130 units do not have NVGs and the required support equipment. Four hundred sets are required.

To support the optimized capability of NVGs, a fully NVIS compatible cockpit is required. While most of the newer C-130 aircraft are NVIS compatible, the ANG's C-130E and C-130H2 aircraft are not. While the ANG's C-130E aircraft will eventually be replaced by newer C-130Js, NVIS compatible cockpit lighting is required for 104 ANG C-130H2 aircraft. A limited NVIS compatible lighting modification is being fielded, with a more complete solution still required.

International airspace management reduced VHF radio channel spacing to create additional frequencies for voice communications between air traffic control and aircraft. This change affects all aircraft operating at altitudes above 24,500 feet. The ANG's 15 C-141s and 15 JSTARS aircraft routinely operate in this high altitude environment and must have the 8.33Mhz channel spacing VHF radios.

Tactical Digital Information Link-J (TADIL-J) / North Atlantic Treaty Organization Link-16 is the primary tactical data link for joint military operations. Most tactical command and control units and fighter aircraft have some TADIL-J capability. As further installations continue, any system not equipped to pass J Series messages will be irrelevant to future joint operations. Of particular note is the current J Series message shortfall found at the air defense sectors. The ANG continues to request NORAD and 1<sup>st</sup> AF address this shortfall. ANG Ranges must have access to TADIL-J to provide aircrew training.

The HC-130 Integrated Countermeasures System merges inputs from the Missile Warning System, Countermeasures Dispensing System, and RWRs to simplify operations, relieve reliance on a human interface, and defeat threats to the aircraft. The ANG requires the upgrade of thirteen HC-130 aircraft.

C-130Js are being provided as replacements for aging C-130 aircraft currently in use by the ANG. Three new CC-130J aircraft are under contract and will be delivered with one to the 143<sup>rd</sup> AW, Quonset Point, RI, and two to the 146<sup>th</sup> AW, Channel Islands, CA. However, this will result in a mixed unit of four CC-130Js and four C-130Es at the 143<sup>rd</sup>, and four CC-130Js and 8 C-130Es at the 146<sup>th</sup>. The C-130Es require replacement with CC-130Js to simplify maintenance, training, logistics support, and manpower.

In a congressionally-directed program, aging EC-130Es are being replaced with new EC-130Js, with the current mission equipment suite being moved from the old aircraft to the new models. Five aircraft have been funded for delivery to the 193<sup>rd</sup> SOW, Harrisburg, PA. Three additional aircraft are needed to complete the unit's conversion and prevent leaving the unit with a mixed fleet of E and J model aircraft.

The 17 JSTARS aircraft still have their original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission. Current planning involves a lease or buy approach utilizing the Pratt and Whitney JT8D-219 engine.

The HH-60 is particularly vulnerable to shoulder fired missiles because of the low altitudes and relatively low airspeeds at which it routinely conducts its missions. The HH-60 SPS provides a limited capability now and is currently being fielded. The ANG requires a total of 18 HH-60s to be equipped with SPS. Two of three ANG squadrons will be completed during FY 2003. We are continuing developmental work on a frequency selective radar warning receiver. The third squadron will be finished in FY 2004.

Two additional C-38A aircraft are required to complete the fleet of four aircraft at Andrews AFB, MD. These ANG aircraft support Congressional, Executive Branch, DoD, AF and ANG travel missions worldwide. The additional aircraft are required to fulfill the numerous small load taskings received, and take advantage of scheduling, training, and aircraft reserve efficiencies that four aircraft provide over two.

The AN/MPN-14K radar, presently being used by the ANG, attained its IOC in the 1950s, and although there have been some upgrades to the MPN-14K through the years, there are currently no spare parts remaining to replace failing equipment. Efforts to implement a replacement program have been slow and as yet not fully successful.

The upgrade of F-16 TARS with the Airborne Information Transfer (ABIT) data link and night, through-the-weather capability will provide a unique near real-time targeting capability on the only high-speed penetrating platform in the AF. The ability of this data link to extend the range for real-time targeting by hundreds of miles when used with airborne relays is unique in the AF and DoD inventory. Current funding only provides for upgrade of two pods for evaluation of the capabilities of the pods. Lessons learned from OIF indicate that the Joint Force Air Commander needed additional reconnaissance capability under his control for accurate and timely bomb damage assessment (BDA), and he said that he should have arranged earlier dispatch of the ANG unit equipped with the TARS pod. Upgrade of the remaining assets is needed to fully support AF requirements for rapid and timely BDA as well as NRT location of mobile/relocatable targets.

Fire vehicle replacements are a continuing problem for the ANG. With fire protection requirements at all our 88 flying units and concurrent responsibility on 44 civilian airfields, it is imperative that all fire departments have dependable response vehicles. At most locations the fire trucks and rescue vehicles have exceeded their expected life by many years. Vehicles are failing at an increasing rate with little hope of replacements in the near term. The total cost to replace the 170 fire trucks would be in excess of \$60 M. A budget line of \$15 M per year would provide replacement and sustainment of the ANG fire fleet. The current budget, however, includes less than \$2 M per year. In addition to putting our aircrews and aircraft at risk, we may soon routinely violate Federal Aviation Administration prescribed requirements at civilian airports where we are contractually obligated to provide such service.

ANG TACP's are currently receiving a new HMMWV, the M-1097, to upgrade a 150 vehicle fleet, all of which are replacement eligible. Recent combat experience has

revealed the force protection shortcomings of the M-1097. Battalion level TACP's require the M-1145 Up-Armored HMMWV to provide adequate protection for personnel and equipment when moving forward to positions from which to control CAS missions. The M-1145 provides protection from a range of small arms (up to 12.7mm), fragmentation effects and mines. The M-1145 costs \$173K each, approximately \$100K more than the currently programmed M-1097.



An additional \$6.5M is needed to provide these urgently needed vehicles. Anything less exposes ANG personnel to unnecessary risk to themselves and the Army personnel they are deployed to support. It also subjects ANG TACP's to the risks of irrelevancy where they will be non-deployable because of the lethality of the modern battlefield.

The ANG operates the Regional Equipment Operators Training Site at Fort Indiantown Gap, PA, on behalf of the total force. This site provides hands-on training for heavy equipment operators (bulldozers, graders, excavators, front end loaders, etc.). This equipment is critical to the engineering bed-down capability, but is too expensive to maintain at each unit for training purposes. This school is the only AF location that can provide the wartime skills training our forces need. The current equipment at the school is well beyond its economic life and is in dire need of replacement. It is a very low priority within ANG and AF budget lines and the \$12M requirement is not currently funded. The lack of new equipment may require the school to terminate courses and leave the AF with no viable training alternative for these wartime skills.

Prior to September 11, 2001, there was a renewed emphasis on NBC programs. The policy decision to put all personnel in a mobility status drives a large bill for chemical suits and protective equipment. The current budget shortfall for the ANG in this program is roughly \$60M. New policy with regard to homeland defense in a post September 11<sup>th</sup> world will create even more equipment requirements for protection of facilities and personnel. While the specific concept of operations has not been determined and there is no budget line for the requirements yet, this is an area of concern that will require priority funding in the near future.

The ANG Transportation section (ANG/LGT) requires \$8.5M to replace our aging HMMWVs. The ANG is authorized 413 HMMWVs with only 400 assigned of which 138 need to be replaced. With limited funding for replacement vehicles AF-wide, the ANG is not expected to reach its authorized total throughout the FYDP, and the fleet will continue to age due to obsolescence.

Also, \$16.5 M is needed to replace 40 aging 25K Loaders. The ANG has 52 (25K) Material Handling Loaders authorized with 52 on-hand. The average age of our 25K Loaders is 17 years. The ANG received four of the new Halvorsen Next Generation Small Loaders in FY 2002 for the Combat Readiness Training Center. With limited

funding it will be some time before the ANG can replace and modernize its fleet of 25K Loaders.

The ANG Medical Service requires \$59.5M to purchase 17 CP- EMEDS +25 non-WRM assemblages, one each to be provided to the ten Federal Emergency Medical Agency (FEMA) regions. One additional assemblage will be placed in each "high risk" FEMA region (6 total), and one is required as a mobile training set. These teams and assemblages are capable of responding in support of either a State or Federal response. Each EMEDS +25 costs \$3.5M.

The ANG Medical Service also requires \$1M to purchase ten BNBC assemblages to provide materiel to support ten BNBC Defense Teams (FFGL1). These teams are capable of responding in support of either a State or Federal response and can complement and expand the capability of the existing NGB CSTs. Each BNBC assemblage costs \$100K.

In addition, the ANG requires \$3.4 M to purchase 20 Patient Decontamination assemblages. These assets provide required materiel to support 20 Patient Decontamination Teams (FFGLB). Each FEMA Region has ANG personnel already trained to provide two FFGLB equivalent capabilities, but lacks available equipment. These assemblages will support consequence management of WMD events through expansion of local patient decontamination capability and support to aeromedical evacuation of contaminated casualties. These teams are capable of responding in support of either a State or Federal response. Each assemblage costs \$170K.

(6) Other Comments: The ANG has successfully leveraged relatively small amounts of NGREA funds into significant enhancements in combat capability by employing innovative modernization business practices. Low cost, high pay-off programs have benefited not only the ANG, but the AC and AFRC as well. By streamlining the acquisition and RDT&E processes, the ANG has provided the aircrew with more capable systems, faster, and at a lower cost. Discretionary NGREA procurement funds have provided dramatic combat capability enhancements for the war-fighter.

While basically ready for low intensity or limited conflicts, lack of full CQ capability throughout the ANG fighter fleet will limit full participation in theater CC directed combat operations. In addition, lack of GATM compliance will significantly impact future mobility operations worldwide.

The ANG expects that EC/CC-130J aircraft procurement will continue to be directed at a low rate through FY 2008, eventually replacing ANG C-130Es. The 172<sup>nd</sup> AW is slated to receive six C-17 aircraft with the first delivery in May 2004.

*Table 8* highlights the ANG's major item unfunded requirements identified within the CQ. The list is compiled from mission priorities established through a formal process that identifies requirements at the unit level and translates that need into a total package.

ANG and AFRC Unit Weapons and Tactics Officers jointly conduct a conference each fall to assess the current state of modernization efforts and establish a priority ranking of programs by weapon system. The ANG Air and Space Operations Directorate (ANG/XO), Requirements Division (ANG/XOR) is responsible for developing this priority list, in coordination with other MAJCOMs, Air Staff, Joint Staff, OSD, and the Congress, to ensure that all of the ANG requirements identified in the FYDP are addressed in the funding process. Modernization requirements not included in the President's Budget Estimate Submission are identified as unfunded priorities. *Table 8* reflects the ANG's best estimate of the critical priorities that are not likely to receive funding.

d) Summary/Conclusions: The ANG currently bases its needs on requirements necessary to meet CC and AEF guidelines for fighting and CS forces. These requirements are embodied in the CQ, which calls for a 24-hour operational capability, survivability in a high threat environment, a combat identification capability, and a precision attack capability. ANG's logistics and ground support elements are considered early in the acquisition process, and all its efforts are targeted at remaining well trained, prepared to react, and ready to respond to any contingency at home or anywhere in the world.

Equal in importance to capability is accessibility of the ANG. Recent events have highlighted the ANG's ability to respond to any short notice tasking, anywhere in the world, with fully combat trained professionals equipped with modern weapon systems.

The overarching objective of the ANG, as part of the Total Force, is to optimize and supplement active component lead command modernization funding, when necessary; to field equivalent and relevant capabilities in each of the major weapons systems; and to streamline the infrastructure and simplify the deployment requirements to make the interchange and interoperability of units more flexible. The AF budgeting and planning process must be structured to project an equipping and funding philosophy reflecting this future of the Total Force.

## Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
<b>AIR REFUELING</b>							
AIR REFUELING, KC-135D/E	KC-135D/E	43,560,000	72	72	72	72	72
AIR REFUELING, KC-135R	KC-135R	57,113,000	127	127	127	127	127
<b>AIR SUPPORT</b>							
AIR SPT, OA-10A	OA-010A	10,791,000	18	18	18	18	18
<b>AIRLIFT</b>							
AIRLIFT, C-130E	C-130E	13,107,600	51	44	18	18	18
AIRLIFT, C-130H	C-130H	33,165,000	147	147	147	147	147
AIRLIFT, C-130J	C-130J	53,361,000	8	11	15	18	18
AIRLIFT, C-141C	C-141C	46,708,200	15	0	0	0	0
AIRLIFT, C-17A	C-017A	185,840,000	0	8	8	8	8
AIRLIFT, C-5A	C-005A	168,260,400	12	12	12	12	12
AIRLIFT, LC-130H	LC-130H	58,707,000	11	11	11	11	11
<b>ELECTRONIC WARFARE</b>							
EL WARFARE, E-8C	E-008C	247,525,000	15	17	17	17	17
EL WARFARE, EC-130E	EC-130E	29,739,600	2	2	0	0	0
EL WARFARE, EC-130J	EC-130J	85,635,000	7	8	8	8	8
<b>FIGHTER</b>							
FIGHTER, A-10A	A-010A	10,791,000	72	72	72	72	72
FIGHTER, F-15A	F-015A	30,729,600	83	83	83	83	83
FIGHTER, F-15B	F-015B	30,729,600	16	16	16	16	16
FIGHTER, F-15C	F-015C	32,907,600	14	15	33	36	36
FIGHTER, F-15D	F-015D	32,907,600	4	6	9	9	9
FIGHTER, F-16A	F-016A	15,988,500	29	31	31	31	31
FIGHTER, F-16B	F-016B	15,988,500	20	20	20	20	20
FIGHTER, F-16C	F-016C	20,700,900	388	392	389	374	374
FIGHTER, F-16D	F-016D	20,700,900	43	45	45	45	45

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
<b>OPERATIONAL SUPPORT</b>							
OPS SPT, C-21A	C-021A	3,653,100	2	2	2	2	2
OPS SPT, C-26B	C-026B	4,623,300	11	11	11	11	11
OPS SPT, C-38A	C-038A	17,820,000	2	2	2	2	2
OPS SPT, C-40C	C-040C	62,500,000	3	3	3	3	3
<b>RESCUE</b>							
RESCUE, HC-130E/H	HC-130E/H	13,226,400	5	5	5	5	5
RESCUE, HC-130N/P	HC-130N/P	20,295,000	11	11	11	11	11
RESCUE, HH-60G	HH-060G	17,424,000	15	15	15	15	15
RESCUE, MC-130P	MC-130P	33,066,000	4	4	4	4	4

### Average Age of Equipment

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

Nomenclature	Equip No.	Average Age	Remarks
<b>AIR REFUELING</b>			
AIR REFUELING, KC-135E	KC-135E	45	
AIR REFUELING, KC-135R	KC-135R	42	
AIR REFUELING, KC-135D	KC-135D	42	
<b>AIR SUPPORT</b>			
AIR SPT, OA-10A	OA-010A	22	
<b>AIRLIFT</b>			
AIRLIFT, C-130E	C-130E	40	
AIRLIFT, C-130H	C-130H	18	
AIRLIFT, C-130J	C-130J	3	
AIRLIFT, C-141C	C-141C	36	
AIRLIFT, C-17A	C-017A	0	Projected delivery of first C-17 is FY05
AIRLIFT, C-5A	C-005A	33	
AIRLIFT, LC-130H	LC-130H	14	
<b>ELECTRONIC WARFARE</b>			
EL WARFARE, E8-C	E-008C	3	
EL WARFARE, EC-130E	EC-130E	39	
EL WARFARE, EC-130J	EC-130J	2	
<b>FIGHTER</b>			
FIGHTER, A-10A	A-010A	23	
FIGHTER, F-15A	F-015A	26	
FIGHTER, F-15B	F-015B	26	
FIGHTER, F-15C	F-015C	22	
FIGHTER, F-15D	F-015D	25	
FIGHTER, F-16A	F-016A	21	
FIGHTER, F-16B	F-016B	21	
FIGHTER, F-16C	F-016C	15	
FIGHTER, F-16D	F-016D	15	

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Table 2

**Average Age of Equipment**

Nomenclature	Equip No.	Average Age	Remarks
<b>OPERATIONAL SUPPORT</b>			
OPS SPT, C-21A	C-021A	16	
OPS SPT, C-26B	C-026B	9	
OPS SPT, C-38A	C-38A	6	
OPS SPT, C-40B	C-40C	1	
<b>RESCUE</b>			
RESCUE, HC-130E	HC-130E	21	
RESCUE, HC-130H	HC-130H	21	
RESCUE, HC-130N	HC-130N	20	
RESCUE, HC-130P	HC-130P	18	
RESCUE, HH-60G	HH-060G	13	
RESCUE, MC-130P	MC-130P	37	

### Service Procurement Program - Reserve (P-1R)

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All values are costs in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>MODIFICATION OF INSERVICE AIRCRAFT</b>				
A-10	14,941,000	14,278,000	22,429,000	
F-15	970,000	830,000	100,000	
F-16	55,500,000	65,700,000	45,900,000	
C-5	9,867,000	10,318,000	28,248,000	
C-130	30,590,000	68,852,000	85,825,000	
C130J MODS	18,460,000	15,431,000	19,242,000	
C-135	22,838,000	40,551,000	56,612,000	
E-8	45,302,000	16,220,000	23,437,000	
H-60	26,200,000	4,300,000		
<b>AIRCRAFT SPARES AND REPAIR PARTS</b>				
INITIAL SPARES/REPAIR PARTS	4,000	4,000	4,000	
<b>AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES</b>				
COMMON SUPPORT EQUIPMENT	52,323,000	52,117,000	52,513,000	
OTHER PRODUCTION CHARGES	1,333,000	1,377,000	1,395,000	
<b>VEHICULAR EQUIPMENT</b>				
TRUCK, CARGO-UTILITY, 3/4T, 4	7,887,000	2,094,000	2,168,000	
TRUCK, CARGO-UTILITY, 3/4T, 4	1,656,000			
TRUCK MAINT/UTILITY/DELIVERY	3,699,000	1,400,000	1,486,000	
HIGH MOBILITY VEHICLE (MYP)	5,673,000	2,203,000	2,660,000	
CARGO & UTILITY VEHICLES - ITEMS LESS THAN \$5,000,000	5,320,000	9,901,000	12,311,000	
HMMWV, ARMORED	2,130,000	2,332,000	2,917,000	
HMWWV, UP-ARMORED	174,000	368,000	375,000	
TRACTOR, A/C TOW, MB-4	3,800,000	1,162,000	1,401,000	
TRACTOR, TOW, FLIGHTLINE	1,992,000	412,000	499,000	
TRUCK HYDRANT FUEL		406,000	385,000	
SPECIAL PURPOSE VEHICLES - ITEMS LESS THAN \$5,000,000	6,511,000	12,514,000	12,172,000	
TRUCK, F/L 10,000 LB	1,273,000	2,235,000	2,697,000	
MATERIALS HANDLING EQUIPMENT - ITEMS LESS THAN \$5,000,000	2,217,000	1,015,000	1,209,000	
TRUCK, DUMP	3,129,000	1,105,000	1,106,000	

## Service Procurement Program - Reserve (P-1R)

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
RUNWAY SNOW REMOVAL & CLEANING	9,486,000	13,698,000	13,087,000	
BASE MAINTENANCE SUPPORT - ITEMS LESS THAN \$5,000,000	4,117,000	4,429,000	2,075,000	
<b>ELECTRONICS AND TELECOMMUNICATIONS EQUIP</b>				
NATIONAL AIRSPACE SYSTEM	3,930,000		7,376,000	
THEATER AIR CONTROL SYS IMPRO	10,949,000	18,129,000	18,348,000	
WEATHER OBSERVE/FORECAST		3,995,000		
AF GLOBAL COMMAND & CONTROL S	525,000	525,000	525,000	
COMBAT TRAINING RANGES	1,700,000	1,700,000	1,700,000	
GCSS-AF FOS	500,000			
THEATER BATTLE MGT C2 SYS	1,634,000	10,097,000	10,400,000	
DEFENSE MESSAGE SYSTEM (DMS)	1,125,000	1,125,000	1,125,000	
NAVSTAR GPS SPACE	1,380,000	1,900,000	160,000	
TACTICAL C-E EQUIPMENT	20,000,000	20,000,000	20,000,000	
BASE COMM INFRASTRUCTURE	29,107,000	30,469,000	31,217,000	
<b>OTHER BASE MAINTENANCE AND SUPPORT EQUIP</b>				
BASE/ALC CALIBRATION PACKAGE	616,000	722,000	739,000	
TEST EQUIPMENT - ITEMS LESS THAN \$5,000,000	39,000	548,000	569,000	
NIGHT VISION GOGGLES	266,000	406,000	273,000	
PERSONAL SAFETY AND RESCUE EQUIP - ITEMS LESS THAN \$5,000,000	3,097,000	1,396,000	1,432,000	
MECHANIZED MATERIAL HANDLING	1,560,000	921,000	944,000	
DEPOT PLANT & MATERIALS HANDLING EQ - ITEMS LESS THAN \$5,000,000	1,957,000	3,916,000	4,005,000	
ELECTRICAL EQUIPMENT - ITEMS LESS THAN \$5,000,000	3,312,000	3,145,000	3,158,000	
PHOTOGRAPHIC EQUIPMENT	350,000	350,000	350,000	
AIR CONDITIONERS	392,000	1,750,000	1,778,000	
BASE SUPPORT EQUIPMENT - ITEMS LESS THAN \$5,000,000	6,025,000	4,825,000	6,002,000	
<b>TOTAL</b>	<b>\$425,856,000</b>	<b>\$451,171,000</b>	<b>\$502,354,000</b>	

### National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
PRECISION STRIKE	3,000,000			
ENHANCED SURVIVABILITY	3,000,000			
DATA LINK COMBAT ID	3,500,000			
24 HOUR OPERATIONS	430,000			
C-130J AIRCRAFT	218,202,854			
P-19 CRASH TRUCK	3,475,674			
F-15 E-KIT UPGRADES	19,860,998			
F-16 BLOCK 42 ENGINE UPGRADES	30,983,158			
PRECISION STRIKE (TARGETING PODS, LITENING II TARGETING POD UPGRADES, AIM-9X CATMS & APN-241 COLOR RADAR)		12,000,000		
ENHANCED SURVIVABILITY (M3M MACHINE GUN FOR HH-60, ALR-69 RADAR WARNING SYSTEM, PIDS-U & COMET PODS)		6,000,000		
DATA LINK COMBAT ID (COLOR DISPLAYS FOR F-16, AAI/IFF, VHF/UHF, DATA LINKS & 8.33 RADIO TCAS RVSM J-VOICE FOR JSTAR)		8,000,000		
24 HOUR OPERATIONS (AUX FUEL TANKS FOR HH-60, NVIS LIGHTING, UARRS & PNVG)		3,831,700		
TARGETING PODS			33,600,000	
F-15 JOINT HELMET MOUNTED CUEING SYSTEM			4,000,000	
C-130 APN-241 COLOR RADAR			1,800,000	
F-16 COLOR DISPLAYS			17,334,550	
F-15 AAI/IFF			4,176,000	
F-16 AAI/IFF			10,000,000	
C-130 LARGE AIRCRAFT INFRA-RED COUNTERMEASURES			10,000,000	
HH-60 CONCORD THREAT RECEIVERS			1,998,000	
PJ/CRO PATIENT SIMULATOR			1,000,000	
F-16 BLK 42 229 ENGINES			7,300,000	
F-15 220E ENGINE KITS (LINE ITEM SPECIFIED)			20,000,000	
F-16 ALR-69 ANTENNA OPTIMIZATION			2,400,000	
A-10 FULL MISSION TRAINER SIMULATOR			2,500,000	
NIGHT VISION GOGGLES			3,001,050	
<b>TOTAL</b>	<b>\$282,452,684</b>	<b>\$29,831,700</b>	<b>\$119,109,600</b>	

### 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 Active 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 2005 Qty	FY 2006 Qty	FY 2007 Qty	Remarks
OPS SPT, C-22B	C-022B	-1			Replaced by C-40C
EL WARFARE, EC-130E	EC-130E		-1		
EL WARFARE, EC-130J	EC-130J		1		
EL WARFARE, E-8C	E-008C	1	1		One aircraft delivered to 116th ACW
FIGHTER, F-15C	F-015C	1	18	21	
FIGHTER, F-15D	F-015D		2	3	
FIGHTER, F-16A	F-16A	2			
FIGHTER, F-16C	F-016C	4	-3	-15	
FIGHTER, F-16D	F-016D		2		
AIRLIFT, C-130E	C-130E	-7	-26		
AIRLIFT, C-130J	C-130J	3	4	3	
AIRLIFT, C-141C	C-141C	-15			
AIRLIFT, C-17A	C-17A		8		First delivery in FY05

### FY 2001 Planned vs Actual Procurements and Transfers

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
B-1B				16,000,000	2,100,000		
A-10				12,700,000	10,400,000		
F-15					9,500,000		
F-16				44,900,000	97,800,000		
C-5				10,700,000	6,600,000		
C-141				200,000			
C-130				41,000,000	20,700,000		
C-135				67,900,000	124,100,000		
H-60					3,500,000		
OTHER AIRCRAFT					400,000		
AIRCRAFT SPARES/REPAIR PARTS				1,000,000			
AIRCRAFT SUPPORT EQUIPMENT & FACILITIES				42,500,000	4,990,000		
BUSES				200,000			
TRUCK MULTI-STOP 1 TON 4X2				3,000,000	2,875,000		
FAMILY MEDIUM TACTICAL VEHICLES				2,700,000			
HIGH MOBILITY VEHICLE (MYP)				2,300,000	2,578,000		
ITEMS LESS THAN \$5,000,000				2,100,000	2,513,000		
TRACTOR, TOW, FLIGHTLINE				2,200,000	1,901,000		
ITEMS LESS THAN \$5,000,000				1,900,000	2,629,000		
TRUCK CRASH P-19				7,100,000	6,233,000		
ITEMS LESS THAN \$5,000,000				400,000	365,000		
TRUCK, F/L 10,000 LB				200,000	511,000		
ITEMS LESS THAN \$5,000,000				500,000	471,000		
TRUCK, DUMP				500,000			
RUNWAY SNOW REMOV AND CLEANING EQUIP				2,200,000	3,068,000		
ITEMS LESS THAN \$5,000,000					4,325,000		
COMSEC EQUIPMENT				1,800,000			
INTELLIGENCE COMM EQUIP				2,000,000	924,000		
AIR TRAFFIC CTRL/LAND SYS (AT					5,987,000		

## FY 2001 Planned vs Actual Procurements and Transfers

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
NATIONAL AIRSPACE SYSTEM				3,300,000	3,305,000		
THEATER AIR CONTROL SYS IMPROVEMENT				1,900,000	777,000		
WEATHER OBSERV/FORCAST				600,000	380,000		
AF GLOBAL COMMAND & CONTROL SYS				900,000	500,000		
AIR FORCE PHYSICAL SECURITY SYSTEM				1,800,000			
COMBAT TRAINING RANGES				1,000,000	10,353,000		
BASE LEVEL DATA AUTO PROGRAM				500,000	500,000		
THEATER BATTLE MGT C2 SYS				1,500,000	1,500,000		
USCENTCOM				200,000			
DEFENSE MESSAGE SYSTEM (DMS)					1,125,000		
NAVSTAR GPS SPACE				200,000			
BASE COMM INFRASTRUCTURE				23,600,000	23,354,000		
ITEMS LESS THAN \$5,000,000				1,500,000	1,508,000		
COMM ELECT MODS				100,000			
BASE/ALC CALIBRATION PACKAGE				700,000	587,000		
ITEMS LESS THAN \$5,000,000				3,000,000	1,184,000		
NIGHT VISION GOGGLES				100,000	452,000		
ITEMS LESS THAN \$5,000,000				900,000	913,000		
MECHANIZED MATERIAL HANDLING EQUIP				1,200,000	1,725,000		
ITEMS LESS THAN \$5,000,000				1,400,000	1,746,000		
FLOODLIGHTS				1,700,000	483,000		
ITEMS LESS THAN \$5,000,000				1,000,000	858,000		
BASE PROCURED EQUIPMENT				4,700,000	9,098,000		
PHOTOGRAPHIC EQUIPMENT				500,000	350,000		
AIR CONDITIONERS				2,400,000	873,000		
ITEMS LESS THAN \$5,000,000				6,200,000	4,122,000		
COLOR DISPLAY F-16 BLOCK 25/30						3,970,000	
ALR-69 ANTENNA OPTIMIZATION F-16 & A-10						3,680,000	107,000
F-16 ADVANCED TARGETING POD (ATP)						3,564,000	16,594,000
HC-130 FORWARD LOOKING INFRARED (FLIR)						3,800,000	3,800,000

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
SADL KC-135, C-130						2,100,000	2,100,000
F-15 ADVANCED VIDEO RECORDING SYSTEM (AVRS)						2,480,000	2,480,000
A-10 IN-FLIGHT FIRE CONTROL COMPUTER						2,484,000	
F-15 BOL IR COUNTERMEASURE DISPENSER (CMDS)						3,003,000	
C-130 ARMOR						1,752,000	1,752,000
PYLON INTEGRATED DISPENSER SYSTEM UPGRADES						2,957,000	2,957,000
<b>TOTAL</b>				<b>\$326,900,000</b>	<b>\$380,163,000</b>	<b>\$29,790,000</b>	<b>\$29,790,000</b>

**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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 Qty	Deployable?	
					Yes	No

**Service Does Not Use Substitution To Satisfy Major Item Equipment Requirements**

### Significant Major Item Shortages

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

PR	Nomenclature	Total Req'd	# Units Short	Unit Cost	Total Shortage Cost	Rationale/Justification
1	F-16/A-10 TARGETING PODS	257	100	1,300,000	1,300,000	Provides precision targeting capability for the F-16/A-10 with an external pod (includes AF FYDP purchase of 70 pods)
2	ACCELERATE A-10 PRECISION ENGAGEMENT	110	110	464,000	51,040,000	Accelerates Precision Engagement upgrade.
3	F-16 COLOR DISPLAYS	425	421	153,000	64,413,000	Enables use of EPLRS/SADL in F-16 aircraft. New display unit increases aircraft processing capability, increases pilot situational awareness and increases combat survivability and lethality. ** (multiple displays per cockpit)
4	F-15 AAI/IFF	139	139	175,000	24,325,000	Provides improved onboard ability to positively identify aircraft as friendly or hostile.
5	C-130 APN-241 RADAR	70	70	765,000	53,550,000	The APN-59 radar currently installed on the C-130 suffers from low reliability, maintainability, and sustainability. The APN-241 will provide increased capability and reduce maintenance costs.
6	F-16 AIFF (BLK 25/30/32)	455	413	225,185	93,001,405	AIFF provides the F-16 BLK 25/30/32/40 fleet with an essential ability to identify friendly aircraft when employing beyond visual range weapons while avoiding friendly-fire disasters--critical for homeland defense and deployed operations
7	C-130 LAIRCM	62	62	1,320,000	255,200,000	Allows combat delivery aircraft to survive in an environment of increasing threat complexity and lethality.
8	HH-60 DEFENSIVE ARMAMENT (.50CAL GUN)	18	18	97,223	3,500,000	Fixes a critical limitation of the current defensive armament to provide adequate protection during CSAR operations.
9	F-16 RE-ENGINEING	63	46	4,325,000	199,000,000	Replaces the PW -220 engine with the -229 to provide increased thrust. Carriage of external pods with the underpowered -220 reduced combat effectiveness and capability
10	F-15 220E ENGINE KITS	283	204	1,500,000	306,000,000	Replaces the PW -100 engine with -220 to provide increased thrust, reduced maintenance, and increases inspection intervals

### III. Air Force Reserve Command (AFRC) Overview

#### a) Current Status of the AFRC

##### 1) General Overview

(a) Mission: AFRC supports the AF mission to defend the United States through control and exploitation of air and space by providing global reach and global power. The AFRC plays an integral role in the day-to-day AF mission and is not a force held in reserve during war or contingency operations.

(b) Resources: AFRC has 37 flying wings equipped with their own aircraft and seven associate units that share aircraft with AC units. Three space operations squadrons share satellite control missions with AC units; one squadron shares the missile early warning mission; two squadrons are integrated into Air Operations Center (AOC) operations; one squadron provides Warfare Center test and aggressor forces; and one squadron provides the only AF presence in the weather satellite control mission. Additionally, there are more than 620 mission support units in AFRC, 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. AFRC has over 440 assigned aircraft comprised of the F-16, A/OA-10, C-5A, C-141, C/MC/WC/HC-130E/H/J/N/P, KC-135E/R, B-52H and HH-60G. These units, aircraft, crews and support personnel stand ready for assignment to the ACC, Air Education and Training Command (AETC), AMC, Air Force Space Command (AFSPC), National Reconnaissance Office (NRO), Air Force Special Operations Command (AFSOC), as well as unified commands upon mobilization.

##### 2) Status of Equipment

#### (a) Equipment On-hand

##### (1) Fighter Aircraft

a. F-16 - "Fighting Falcon": The F-16 is a highly maneuverable fighter designed to provide multi-role capability for today's complex battlefield environment. This aircraft is primarily used for missions in offensive counter-air (air-to-air and air-to-ground), air interdiction, suppression of enemy air defense, close air support, and air strike control. AFRC has 60 F-16C/D aircraft consisting of block 25, 30, and 32 airframes assigned to Naval Air Station (NAS), Joint Reserve Base, Ft Worth, TX; Hill AFB, UT; Homestead ARS, FL; and Luke AFB, AZ. These aircraft represent five percent of the overall



**F-16 "Fighting Falcon"**

AF F-16 inventory. Recent modifications include precision guided munitions capability, SADL, electronic warfare receiver antenna relocation, and precision weapons compatible pylon upgrade. The net major modification identified by the AC for the F-16 fleet is to modify the newest F-16s with a color display and processor. This will overcome the limitations in displaying real time mission information imposed by monochromatic displays in the cockpit. Because AFRC and the ANG are primarily equipped with older F-16s that use different processors than the AC, we will be teaming up to lay the groundwork necessary to provide a similar information processor and color display for AFRC and ANG assets. This capability will allow our pilots to continue to achieve interoperability with the AC in the information intense airspace of the near future.



**A/OA-10 - “Thunderbolt II”**

b. A/OA-10 - “Thunderbolt II”: The A-10 aircraft is primarily used in close air support and forward air control (FAC) missions. The OA-10 is the FAC version of the A-10. There are 45 O/A-10 aircraft assigned to AFRC, located at Whiteman AFB, MO; Barksdale AFB, LA; and New Orleans Naval Air Station Joint Reserve Base, LA. As resources become available, Air Combat command will upgrade all A-10 aircraft with the precision engagement program. This modification incorporates tactical datalink, targeting pods, and smart weapons capability.

## (2) Bomber Aircraft

B-52H - “Stratofortress”: The B-52H mission is to perform strategic attack, air interdiction, offensive counter air, air-to-surface, suppression of enemy air defenses, mine-laying, and joint maritime operations. Nine B-52H aircraft are assigned to AFRC at Barksdale AFB, Louisiana. This unit is tasked to employ unguided gravity conventional munitions, Conventional Air Launched Cruise Missiles, the precision GPS - guided JDAM, and the Wind Corrected Munitions Dispenser (WCMD). Enhancements to the AFRC B-52 fleet, which are currently under consideration are: (1) Visual clearance of the target area in support of other conventional munitions employment; (2) Self-designation of targets, eliminating the current need for support aircraft to accomplish this role; (3) Target coordinate updates to JDAM and WCMD, improving accuracy; and (4) Bomb Damage Assessment of targets.



**B-52 – “StratoFortress”**

### (3) Airlift Aircraft

- a. C-141C - “Starlifter,” Strategic Airlift: The C-141C is used for long-range airlift. AFRC has 8 C-141C aircraft assigned to Wright-Patterson AFB, OH and March ARB, CA. The AF’s current plan is to retire the fleet by FY 2006.



**C-141C - “Starlifter”**

- b. C-5 “Galaxy,” Strategic Airlift: The C-5A is a long range, heavy-lift aircraft. The AFRC has 28 aircraft assigned to Westover Air Reserve Base (ARB), MA, and Lackland AFB, TX. The steady decrease in reliability and increase in annual maintenance costs of the C-5A are a significant concern. Two major modification programs, the C-5 AMP and the RERP, are underway for the C-5 fleet. The RERP depends upon successful completion of AMP. The RERP will reduce the need for engine removals, decrease noise and emissions, and increase the fleet's climb and payload capability. Future consideration will be given to the C-5



**C-5 – “Galaxy”**

Malfunction Detection, Analysis, and Recording System (MADARS) and C5 Emergency DC Power Generator Upgrades. MADARS upgrade replaces obsolete and unsupported MADARS II components, while the DC power upgrade identifies a DC power shortfall of 15 amps growing to potentially 25 amps under the C-5 AMP modification.

- c. C-130 “Hercules”, Theater Airlift: The C-130 aircraft is used to support the tactical airlift mission. Its speed, range, load-carrying characteristics



**C-130 - “Hercules”**

and capability to operate under difficult terrain conditions make it an invaluable and versatile aircraft able to land and deliver its cargo on unimproved landing strips. Other missions involve aeromedical evacuation and special air support operations. Additionally, Reserve C-130H aircraft support two civil missions: fire fighting and aerial spraying. The AFRC has 92 C-130 aircraft, including the E, H, and J models assigned to 12 different Reserve units. Long-term modernization includes the AMP to the “E” and “H” models. This effort will convert the entire C-130E & H fleet to a standard configuration called the C-130 “X.” Major X-model changes would include a glass cockpit (avionics modernization), more powerful engines (Dash 15), and an Auxiliary Power Unit.

(4) Special Mission Aircraft

a. WC-130 “Hurricane Hunter”: There are 10 WC-130H and 10 WC-130J (Hurricane Hunter) aircraft operating with the 53<sup>rd</sup> Weather Reconnaissance Squadron (WRS) at Keesler AFB, MS. These aircraft are specially modified to penetrate hurricanes and typhoons while collecting and transmitting data to special ground stations. The aircraft carries meteorologists and other weather specialists who track and forecast the movement of these severe storms. The 53 WRS is scheduled to replace all of the “H” models with “J” models once the WC-130J is weather certified.



**WC-130 “Hurricane Hunter”**

b. MC-130E “Combat Talon I”: AFRC owns 12 MC-130E Combat Talon I aircraft assigned to the 919 Special Operations Wing at Duke Field, FL.



**MC-130E “Combat Talon I”**

This is AFRC’s only “reverse-associate” unit, where active duty aircrews fly Combat Talon I missions on the AFRC aircraft. The MC-130E is equipped for night and adverse weather, low-level, and deep-penetration tactical missions. Additionally, these aircraft conduct aerial refueling of special operations helicopters.

c. HC-130 Hercules - “King”: AFR has 5 HC-130N/P aircraft located at Patrick AFB. The HC-130N/P is configured to support the CSAR mission in conjunction with providing air refueling to CSAR helicopters.



**HC-130 Hercules –“King”**

- d. HH-60G - “Pave Hawk”: AFR has a total of 13 HH-60G helicopters located at Davis Monthan AFB, AZ and Patrick AFB, FL. These helicopters are the heart of combat rescue.



**HH-60G “Combat Rescue”**

(5) Aerial Refueling Aircraft

KC-135 “Stratotanker”: The Stratotanker is the military version of the Boeing 707 transport. The KC-135E and KC-135R aircraft carry approximately 200,000 pounds maximum transfer fuel load. While the KC-135 is primarily tasked with aerial refueling, it is also used to airlift cargo and personnel. The KC-135E has an approximate range of 1,200 miles with 150,000 pounds of transfer fuel,

and the KC-135R has an approximate range of 1,500 miles with 150,000 pounds of transfer fuel. Approximate ferry range is up to 11,000 miles. AFRC has 72 KC-135E/R aircraft assigned to Selfridge Air National Guard Base (ANGB), MI; Beale AFB, CA; Grissom ARB, IN; Seymour-Johnson AFB, NC; March ARB, CA; and Tinker AFB, OK.



AFRC is scheduled to replace 16 KC-135E models with 16 KC-135R models that will be transferred from the AC in FY04 and FY05. Reserve squadrons equipped with KC-135 aircraft provide about 13 percent of the AF’s KC-135 aerial refueling capability.

**KC-135 “Stratotanker”**

(6) Trainers

a. C-130 H2 & H3 Weapon Systems Trainers (WST): The WSTs simulate all cockpit instruments, including ground-mapping radar and air defensive systems, and are capable of NVG training. The WSTs support tactical, low level, airdrop training for C-130 pilots, copilots, flight engineers, and navigators. Each WST is also accompanied by a stand-alone navigation trainer to provide C-



**C-130 H2 & H3 Weapons Systems Trainers (WST)**

130 navigators with quality training in over-water flight procedures and airborne radar approaches. AFRC expects Full Operational Capability (FOC) for the FTU in FY 2003. The first FTU class started in August 2001. With one H2 WST to accommodate the existing continuation training and additional FTU student loads, FOC for training these students cannot be achieved without additional devices in the H2 configuration. In FY 2003 AFRC funded an effort to convert the H3 Unit Level Trainer to an H2 Flight Training Device (FTD) configuration to support the FTU when delivered in FY 2005. Additionally, a fuselage trainer currently available at Dobbins ARB, GA, supports training for the Loadmaster position. This trainer will require a long term bed-down conducive to FTU training.

b. C-130J Maintenance and Aircrew Training System

(MATS): The C-130J MATS program is supported by an AFRC initiative to build the first WST. This C-130J WST is equipped with a state-of-the-art hydraulic motion base and a large, wrap-around, out-the-window visual system. The WSTs simulate all cockpit instruments, including ground-mapping radar and air defensive systems, and are capable of NVG training. The WSTs support tactical, low-level, airdrop training for C-130 pilots, copilots, flight engineers and loadmasters. The WST is located at Keesler AFB, MS. This AFRC WST serves AC crews of the C-130J and RC crews of the C-130J and WC-130J.

c. C-5 WST: AFRC has a C-5B simulator at Westover ARB, MA. This simulator has a unique visual capability to train both air refueling and conventional air-land mission procedures. Another AFRC C-5 WST is located at the 433rd Airlift Wing (AW) at Lackland AFB, TX. This WST has state-of-the-art hydraulic-motion base and a large wrap-around out-the-window visual system, which complies with FAA level C+ Standards. It supports training of the Pilot, Copilot, and Flight Engineer positions for mission qualification, upgrade, and continuation training. Maintenance Engine Run training capability provided by this WST also supports maintenance personnel training.

d. C-141 Total Training System (TTS): With the programmed drawdown of the C-141 fleet, the remaining assets will all be in the RC after FY 2002. As a result, AFRC established a FTU in October 2001 at Wright-Patterson AFB, OH. The FTU provides initial qualification training for all C-141 crewmembers. Follow-on training for the C-141C model is conducted at Wright Patterson, and final B-model training is conducted at McGuire AFB, NJ. Due to the age of this airframe, parts and subsystems are becoming obsolete and cannot be effectively maintained. Given the current operations tempo, it is essential that these training assets be maintained to support training mission-ready crews until the C-141 planned retirement in FY 2006.

e. A-10 Full Mission Trainer (FMT): AFRC has two A-10 FMTs at Whiteman AFB, MO and New Orleans NASJRB, LA, and two older A-10 FMTs at Barksdale AFB, LA. The A-10 FMT provides the highest fidelity simulator training for the A-10 flight community. These trainers are critical to supporting mission training capabilities, and normal, emergency instrument weapons, or tactics procedures.

Planned upgrades include a PC-based image generator, with a wrap-around visual display system, and upgrades to the visual database using real world photographic imagery. To continue to train crews effectively, concurrency modification to the training devices must be funded to ensure configurations between the aircraft and the training devices are identical. Although AFRC's A-10 FMTs do not currently operate in a networked/Distributed Mission Training (DMT)-like training environment, the design supports networked/DMT-like training capability.

f. F-16 Multi-Task Trainer (MTT): AFRC has four F-16 MTTs located at Hill AFB, UT; Homestead AFB, FL, Ft. Worth NASJRB, TX,; and Luke AFB, AZ. These MTTs provide important systems training to F-16 Block 25/30/32-qualified AFRC, ANG, and ACC pilots. Furthermore, these trainers are critical in supporting mission training capabilities, and normal, emergency instrument weapons, and tactics procedures. AFRC also plans to upgrade these devices to full tactical mission capability over the next several years. To continue to train crews effectively in the procedures listed above, concurrency modification to the training devices must be funded to ensure configurations between the aircraft and the training devices are maintained. While the F-16 MTTs do not currently operate in a networked/DMT-like training environment, the design supports networked/DMT-like training capability. MTTs do not currently have the required fidelity to operate with other higher fidelity network capable devices. At a minimum, visual systems upgrades will be required to upgrade these devices to DMT minimum fidelity standards.

(b) Average Age of Current Equipment: See *Table 2*.

(c) Compatibility of Current Equipment with AC: AFR equipment is compatible to support all applicable AF missions. The only equipment that might be considered a substitution is the 10 WC-130H aircraft at Keesler AFB, MS. The unit was programmed to have all 10 WC-130J models delivered by the end of FY 2001, however, MIL SPEC delivery from the manufacturer has been delayed. The WC-130J aircraft are fully assembled but are awaiting equipment modifications to meet acceptance specifications. The unit will continue to operate the older WC-130H until that time.

With the help of specific Congressional funding, AFRC has been able to keep the AFR equipment mission compatible. Some of the completed upgrades include:

- 1 C-130J aircraft procurement
- A-10 Unit Training Devices - ECPs
- F-16 SEM/EDX Engine testers
- F-16 ALR-69 Antenna Modification Kits

The next essential modification efforts for AFRC will be:

- F-16 Solid state video tape recorders
- C-130H3 Simulator conversion (ULT)
- WC-130 Digital dewpoint hygrometers

- F-16 Data link upgrade

(d) Maintenance Issues:

(1) C/WC-130J Funding & Sustainment. Interim Contractor Support (ICS) for hardware and software is not fully funded. There are low levels of spares on aircraft parts used for ICS. Also, funding is required for Field Service Representative until testing of C/WC-130J is complete. Intermediate Maintenance funding for C/WC-130J propellers is also needed. Mission Impact: Mission Capable rates negatively impacted, reducing aircraft availability.

(2) TF-39 Engine on C-5 Aircraft. TF-39 engines cost an average of \$2M per overhaul. This cost consumes a disproportionate amount of limited funding resources. The AFRC C-5A fleet comprises seven percent of AFRC total aircraft and less than nine percent of the installed engines. However the TF-39 overhaul accounts for over 58 percent of AFR engine overhaul budget across the FYDP (\$640.7M). Mission Impact: With appropriate funding, no adverse impact.

(3) A-10 Wing Station 23 Inspection. Three AFRC A-10 aircraft are scheduled for FY 2004; inspections will take place during 2nd Quarter of FY 2004. Thus far, a 20 percent failure rate has been noted. (An inspection failure requires wing change.) Mission Impact: Mission Capable rates negatively impacted; aircraft availability is reduced.

(4) C-141 Sustainment During Drawdown. Remaining C-141 fleet is being phased out. During this period, enroute (aircraft deployed off station) maintenance and recovery support are key concerns.

(5) KC-135E TF33P102 Engine Overhaul Cost Increases. The Air Force is the only service with KC-135E aircraft. Depot Purchased Equipment Maintenance (DPEM) engine funding is a concern. (FY 2002: \$ 782K; FY 2003: \$955K; FY 2004: \$1.3M.) Mission Impact: With appropriate funding, no impact.

(6) Maintenance Support Information Technology Modernization. Recent AF requirements have been levied upon all Major Commands requiring implementation of new maintenance support information technologies sooner than current POM funding satisfies. New information technologies include: Electronic Maintenance Operation Center (EMOC), Tool Accountability System (TAS) and Wireless RF LAN infrastructure. (Note: deployment of Digital Technical Orders being delivered ahead of schedule, accelerating need for funding of laptops on flight line. Air Force electronic technical order distribution/management system is also a concern. JCALS is a good idea, as is ETIMS, however, funding to obtain these new technologies has been a continuous issue. The impact could be significant with respect to aircraft maintenance -- all newer weapons systems are coming with electronic technical orders. With an increasing dependence on technology, we need to make a commitment to a single solution. AFRC cannot afford otherwise if it is to remain compatible with the AC.

(e) Modernization Programs and Shortfalls: Congress initiated NGREA funding in December 1981 to address RC readiness issues. Public laws and legislative language directed that this equipment appropriation be intended to overcome shortfalls in the readiness, combat capability, and modernization issues of Reserve forces. The following are shortfalls categorized by major weapon systems.

(1) Fighter Aircraft

a. F-16: One of the main limitations of AFR F-16 aircraft is the need for new display processors to fully maximize the pilots' situational awareness. The current display processor can fail without any prior indication of operating in a degraded mode. AFRC is actively looking at upgrading the processor with COTS technology. AFR F-16s are also being modified to improve the threat warning accuracy with a modification to the antenna location for the ALR-69 radar-warning receiver system.

b. A-10 and OA-10: One of the A-10 requirements is to continue to upgrade the A-10 and OA-10 in the area of high threat survivability. Completed efforts have separately provided an accurate missile warning system and effective modern flares. A modification that will fully satisfy the survivability requirement, dictated by current tactics and enemy threat, would be the incorporation of a preemptive covert flare system. The A-10 can leverage the work done on the F-16 Radar Warning Receiver and C-130 towed decoy development programs to achieve a cost-effective capability.

An additional shortfall is the A/OA-10's thrust deficiency. This aircraft originally designed for low altitude employment, is now tasked, according to theater commanders' requirements, to operate at medium altitudes. With the current engines, this requires operations with reduced weapons payload and reduced fuel load. There are 45 AFR A/OA-10s that need upgraded structures and engines. At two engines per aircraft and five spares, there is a requirement for a total of 95 engines.

(2) Bomber Aircraft - B-52H: A major modification requirement is to provide a data link or situational awareness system to support the extended B-52 mission timeline. The battlefield can be expected to change significantly during a lengthy (8-10 hours or more) B-52 mission. A system is needed to provide the crew with a moving map display that includes enemy surface and air threats in addition to friendly aircraft locations. The display system would also be used to provide the aircrew with target-set updates during flight. Another necessary modification is the Laser Guided Bomb pod for Battle Damage Assessment. It could instantly provide war planners with campaign mission results.

(3) Airlift / Special Missions Aircraft

a. C-141: The C-141 is scheduled to retire in FY 2006. Follow-on replacement missions include the C-5, C-17, and KC-135.

b. HH-60G and HC-130 - CSAR: CSAR is a requirement for most military contingency operations. For example, the 920<sup>th</sup> Rescue Group's (RQG) Pave Hawk helicopters and HC-130 Hercules aircraft are in constant demand. The wing's crews are trained for day or night operations and low-level and over-water missions. They require night vision devices to enhance their rescue operations. In addition to its combat missions in OIF, the 920 RQG routinely supports civilian search and rescue requirements in the coastal waters of the U.S. beyond the range of the USCG. It also provides support to: AEF requirements; NASA Space Shuttle mission rescue support; launch support at Cape Canaveral, FL; and drug enforcement agencies in counter-drug operations.

Lead command responsibility for modernization of the Combat Search and Rescue Total Force capabilities has transferred from ACC to AFSOC in the first quarter of FY04. The rescue airframes AFSOC acquired in this transfer are not considered SOF unique assets, and therefore do not fall under USSOCOM's Major Program Force (MPF) 11. As a result, modifications to the Rescue force will have to be made by lead command AFSOC with MPF 4 money. Although an initiative has begun to seek a replacement for HH-60 helicopter, no plans exist to fund a replacement for the aging HC-130 Tanker aircraft. Most of these airframes are approaching 40 years of service. AFRC was able to use NGREA funds to modernize some of the combat rescue assets and maintain the capability to support the AF in numerous contingency operations as well as AEF rotations.

c. C-130: Necessary upgrades include the continued modernization of HC-130s with Night Vision Compatible Aircraft Lighting Systems, and equipping nine HC-130s with the APN-241 navigation ground map radar to improve aircrew survivability and weapon system reliability.

(4) Aerial Refueling Operations - KC-135: Due to fleet age, corrosion, and maintenance costs, the KC-135E fleet is experiencing significant reliability and sustainability problems and is in need of a configuration upgrade. For example, the current engine system (engines/start carts, etc.) does not meet noise and environmental requirements of the Clean Air Act. Corrosion damage is driving bills for which the AF has not budgeted. Engines are twice as expensive to overhaul and required ten times more often than R-models. There are 16 AFRC KC-135E aircraft requiring upgrades to the KC-135R configuration. The AFRC considers KC-135E to R modernization as one of its top priorities.

(f) Overall Equipment Readiness: Presently, AFR weapons systems maintain equipment readiness on par with the AF except where limited by modernization restrictions. Readiness is achieved with constant close coordination with the lead

commands to assure inclusion of AFR assets and mission capabilities in current requirements and funding.

b) Changes Since Last NGRER: A significant change in the AFR mission areas has been the reduction of AFR CSAR assets as a result of the programmed transfer of five HC-130s and eight HH-60Gs to the Active Air Force to be completed during FY 2004. The CSAR mission will be replaced with an air-refueling wing consisting of 8 KC-135s. This is seen in *Table 1* and *Table 5*. At the time of publication of this report there were several changes in near-term acquisition plans for the AF that will include changes for AFR equipment types and quantities. This includes the possibility of a COTS tanker aircraft, which might result in a trickle down of KC-135R aircraft. These changes have not yet been approved, and therefore have not been included.

c) Future Years Program (FY 2005-FY 2007):

1) FY 2007 Equipment Requirements: The following are unfunded, priority, major equipment requirements that were validated by the AFRC Requirements Review Board. AFRC continues to pursue AF and OSD support to provide funding necessary to meet these equipment needs.

a. C-17 Aircraft: AFRC's first unit-equipped C-17 squadron stands up at March ARB starting FY05.

b. C-130J Aircraft: Three additional aircraft are required to complete Keesler AFB, MS, conversion to J model C-130s.

c. KC-135 Re-Engine: This requirement is to replace all "E" model engines with "R" model engines. The "R" model upgrade increases payload capability of aircraft and includes larger flight control surfaces and improved landing gear and brakes. The total program requirements include kits and installation for a total of 16 aircraft.

d. F-16 Display Processor: Current AFR F-16 display processors attempt to process much more data than they were originally designed to process. Processors "lock-up" frequently and replacements are no longer produced. High-definition, color, multi-functional display Processors will provide the F-16 pilot more precise and detailed data, with greatly increased data handling capability. This will allow improvement in threat awareness, positive identification of friendly locations, target interpretation, advancing situational awareness, and increased weapons and targeting system accuracy and provisions to accommodate increased data handling required by near-term data and weapons improvements.

e. F-16 Helmet Mounted Cueing System (HMCS): HMCS will provide F-16 pilots an integrated capability by combining data from the multi-functional displays, instrumentation, and other on-board avionics. It will significantly improve Air-to-Air

and Air to Ground mission effectiveness by providing Heads-Up Display information and spatial cueing directly onto an aircrew helmet visor.

f. F-16 Pylon Integrated Dispenser System (PIDS): PIDS universal upgrade is a modification to the PIDS that allows the aircraft to comply with Military Standard (MIL STD) 1760 for electronics bus. The MIL STD 1760 interface is necessary to support the growing inventory of precision guided weapons that use the GPS for all weather trajectory guidance.

g. C-130 H3 Unit Level Trainer (ULT) Conversion to an H2 Model: The 700 Airlift Squadron at Dobbins ARB has recently begun C-130 H2 Formal Training with a minimum load of students in FY 2001. The number of students will steadily increase to their maximum level in FY 2003. Current ATS assets available at Dobbins for the FTU consist of one C-130H2 WST. A single device cannot support sustained operations for all of the student and continuation training requirements expected by FY 2003. An excess C-130 ULT (but with H3 configuration) was relocated from Niagara Falls to Dobbins AFB. Conversion to an H2 trainer will allow the Dobbins FTU to run at their full capability of student production. Effort was awarded in FY 2003 (July) to convert this device to a level six C-130 H2 FTD as defined by FAA AC 120-45A. We expect this device to be fielded at Dobbins in 3<sup>rd</sup> Quarter FY 2005.

2) Anticipated New Equipment Procurements: AFR received approximately \$10M in NAREA funds for FY 2003. The following equipment procurement efforts were selected as the most critical to pursue within the total authorized amount:

- WC-130 Digital Dewpoint Hygrometer
- HC-130 Lightweight Airborne Retrieval System
- C-130H3 Simulator Conversion (ULT)
- A-10 Fuel Tank Foam Installation
- F-16 Solid State Video Recorder
- C-130 Spray Paint Booth
- Anti-Terrorism/Force Protection (AT/FP) Equipment
- Miscellaneous Vehicles
- HH-60G FE/Gunner Seat
- A-10 EW Bus Connector
- F-16 Multi-Task Trainer (MTT) Visual Upgrade + spares
- F-16 MTT CASNET
- MC-130E Radar Altimeter Replacement
- MC/HC-130 Crash Resistant Paratroop Door Seats

3) Anticipated Transfers and Withdrawals from AC to RC: Over the FYDP, AFRC anticipates the replacement of C-141C aircraft with either C-5, C-17 and KC-135R aircraft. Additionally, AFRC's aging KC-135E aircraft will be replaced with newer KC-135R models in FY 2004 and FY 2005. Two KC-135s will transfer from AC to AFRC to backfill new air refueling wing at Portland IAP, OR.

4) Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2007: AFRC can mobilize forces to support nearly every contingency worldwide, including domestic humanitarian relief missions. There has been no impact on readiness attributable to these mobilizations. All of the selective Reserve units are fully capable of meeting their required response time. This impressive capability has been proven, and represents the RC model of seamless integration into gaining Major Commands' operational employment. AFR forces are fully integrated into the Global Reach laydown. With the establishment of the 10 AEFs, all AFR combat support forces will be continually integrated with AC forces in meeting the overall operational employment requirements in contingencies in all theaters of operations.

AFR combat readiness and mobilization are regularly evaluated in accordance with the AF Inspection system. Operational Readiness Inspections (ORI) are accomplished by gaining major commands every four years. The inspection systems measure a unit's ability to mobilize and deploy, as well as its combat readiness. Medical units (previously evaluated repeatedly by the AF Inspection Agency) are now included in ORIs to ensure they are ready to meet their wartime taskings. AFR units are measured against the same standards and criteria required of an AC unit.

d) Summary and Conclusions: AFRC continues to advocate its modernization needs to the AC and Congress. Through the hard work and dedication of AFR men and women, Reserve personnel participate in real-time contingencies as a critical partner on the AF team. To ensure a sharp and ready edge, AFR plans, programs, and facilitates its equipment requirements within the AF process. AFR requirements are presented, analyzed, and advocated under the same process used by the AF. In addition, AFR utilizes its internal Requirements Review process to further prioritize, validate, and source below the line and unfunded requirements. It engages in vigorous modernization efforts to provide the capability required to meet the war fighters' needs.

Since September 11, 2001 AFRC has faced many new challenges. Foremost among these is the challenge of maintaining a steady state operations tempo. While this is possible in the short term, long term effects will include reduced manning, retention levels, and a decrease in mission capable rates for AFRC aircraft. AFR continues to work hand in hand with the AC to surmount these challenges and remain a viable part of the Total Force.

AFRC steadfastly upholds the core values of: "Integrity First, Service Before Self, and Excellence In All We Do" as its operating standard.

**AFRC**

Table 1

**Consolidated Major Item Inventory and Requirements**

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
<b>AIR REFUELING</b>							
AIR REFUELING, KC-135E	KC-135E	44,000,000	8	0	0	0	0
AIR REFUELING, KC-135R	KC-135R	57,690,000	64	72	72	72	72
<b>AIR SUPPORT</b>							
AIR SUPPORT, OA-10A	OA-010A	10,900,000	8	8	8	8	8
SPECIAL OPS, MC-130E	MC-130E	72,300,000	12	12	12	12	12
WEATHER WC-130J	WC-130J	75,500,000	10	10	10	10	10
<b>AIRLIFT</b>							
AIRLIFT, C-130E	C-130E	13,240,000	14	9	8	8	8
AIRLIFT, C-130H	C-130H	33,500,000	73	74	72	72	72
AIRLIFT, C-130J	C-130J	64,000,000	5	8	8	8	8
AIRLIFT, C-141C	C-141C	47,180,000	8	8	0	0	0
AIRLIFT, C-17A	C-17A	219,200,000	0	2	8	8	8
AIRLIFT, C-5A	C-5A	169,960,000	28	30	35	24	24
AIRLIFT, C-5B	C-5B	156,800,000	0	0	0	8	14
<b>BOMBERS</b>							
BOMBERS, B-52H	B-52H	73,400,000	8	8	8	8	8
<b>FIGHTERS</b>							
FIGHTER, A-10A	A-010A	10,900,000	45	39	39	39	39
FIGHTER, F-16C	F-16C	20,910,000	53	53	53	53	53
FIGHTER, F-16D	F-16D	20,910,000	7	7	7	7	7
<b>RESCUE</b>							
RESCUE, HC-130N	HC-130N	20,500,000	4	4	4	4	4
RESCUE, HC-130P	HC-130P	20,500,000	1	1	1	1	1
RESCUE, HH-60G	HH-60G	17,600,000	13	13	13	13	13

**AFRC**

Table 1

**Consolidated Major Item Inventory and Requirements**

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Unit Cost</b>	<b>Begin FY 2005 QTY O/H</b>	<b>Begin FY 2006 QTY O/H</b>	<b>Begin FY 2007 QTY O/H</b>	<b>End FY 2007 QTY O/H</b>	<b>End FY 2007 QTY REQ</b>
<b>TRAINERS</b>							
TRAINER, A-10 FMT	A-10-FMT	2,800,000	4	4	4	4	4
TRAINER, F-16 MTT	F-16 MTT	2,500,000	4	4	4	4	4
TRAINER, C-130 H3, WST/SNS	C-130 H3	11,500,000	1	1	1	1	1
TRAINER, C-130 H2, WST/SNS	C-130 H2	20,000,000	1	1	1	1	1
TRAINER, C-130 H2, ATD	C-130 H2, ATD	5,000,000	1	1	1	1	1
TRAINER, C-130 H3, ULT	C-130H3 ULT	5,000,000	1	1	1	1	1
TRAINER, C-130J, WST	C-130J, WST	31,000,000	2	2	2	2	2
TRAINER, C-5, WST	C-5, WST	27,000,000	1	1	1	1	1
TRAINER, C-130 H2, ULT	C-130H2 ULT	5,000,000	1	1	1	1	1

## AFRC Average Age of Equipment

Table 2

<i>NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.</i>			
Nomenclature	Equip No.	Average Age	Remarks
<b>AIRLIFT AIRCRAFT</b>			
AIRLIFT, C-130E	C-130E	40	
AIRLIFT, C-130H	C-130H	14	
AIRLIFT, C-130J	C-130J	5	
AIRLIFT, C-141C	C-141C	37	
AIRLIFT, C-5A	C-5A	33	
<b>BOMBERS</b>			
BOMBER, B-52H	B-52H	42	
<b>FIGHTERS</b>			
FIGHTER, A-10	A-10	24	
FIGHTER, F-16C	F-16C	16	
FIGHTER, F-16D	F-16D	18	
<b>RESCUE AIRCRAFT</b>			
RESCUE, HC-130N	HC-130N	35	
RESCUE, HC-130P	HC-130P	38	
RESCUE, HH-60G	HH-60G	15	
<b>REFUELING AIRCRAFT</b>			
AIR REFUELING, KC-135E	KC-135E	44	Phase out remaining A/C in 2005
AIR REFUELING, KC-135R	KC-135R	44	
<b>SUPPORT AIRCRAFT</b>			
AIR SUPPORT, OA-10A	OA-010A	23	
SPECIAL OPS, MC-130E	MC-130E	39	
WEATHER, WC-130J	WC-130J	3	
<b>TRAINERS</b>			
TRAINER, A-10 FMT	A-10 FMT	5	
TRAINER, C-130 H2, ATD	C-130 H2, ATD	4	
TRAINER, C-130 H2, WST/SNS	C-130 H2	4	
TRAINER, C-130 H3, ULT	C-130H3 ULT	7	
TRAINER, C-130 H3, WST/SNS	C-130 H3	5	
TRAINER, C-130J, WST	C-130J, WST	3	
TRAINER, F-16 MTT	F-16 MTT	12	
TRAINER, C-130 H2, ULT	C-130H2 ULT	7	

### Service Procurement Program - Reserve (P-1R)

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All cost values are in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

Nomenclature	FY 2005	FY 2006	FY 2007	Remarks
<b>MODIFICATION OF INSERVICE AIRCRAFT</b>				
B-52	8,299,000	11,308,000	6,286,000	
A-10	7,471,000	7,139,000	11,214,000	
F-16	3,600,000	3,900,000	3,400,000	
C-5	23,222,000	24,388,000	68,266,000	
C130J MODS	12,553,000	10,493,000	13,084,000	
C-135	7,785,000	13,824,000	19,300,000	
H-60	16,900,000	5,100,000	2,046,000	
<b>AIRCRAFT SUPPORT EQUIPMENT AND FACILITIES</b>				
COMMON SUPPORT EQUIPMENT	13,645,000	13,918,000	14,196,000	
<b>VEHICULAR EQUIPMENT</b>				
TRUCK, CARGO-UTILITY, 3/4T, 4	647,000	407,000	514,000	
TRUCK, CARGO-UTILITY, 3/4T, 4	288,000			
TRUCK MAINT/UTILITY/DELIVERY	935,000	447,000	474,000	
HIGH MOBILITY VEHICLE (MYP)	667,000	400,000	818,000	
CARGO & UTILITY VEHICLES - ITEMS LESS THAN \$5,000,000	601,000	2,493,000	2,232,000	
HMMWV, ARMORED	171,000	418,000	687,000	
HMWWV, UP-ARMORED	174,000			
TRACTOR, A/C TOW, MB-4	902,000	211,000	431,000	
TRACTOR, TOW, FLIGHTLINE	268,000	75,000	154,000	
TRUCK HYDRANT FUEL		202,000	192,000	
SPECIAL PURPOSE VEHICLES - ITEMS LESS THAN \$5,000,000	1,457,000	5,469,000	1,957,000	
TRUCK, F/L 10,000 LB	982,000	406,000	830,000	
MATERIALS HANDLING EQUIPMENT - ITEMS LESS THAN \$5,000,000	132,000	169,000	300,000	
RUNWAY SNOW REMOVAL & CLEANING	2,368,000	1,528,000	1,563,000	
BASE MAINTENANCE SUPPORT - ITEMS LESS THAN \$5,000,000	2,180,000	2,297,000	594,000	
<b>ELECTRONICS AND TELECOMMUNICATIONS EQUIP</b>				
NATIONAL AIRSPACE SYSTEM	5,843,000	5,471,000	2,500,000	
WEATHER OBSERVE/FORECAST		2,600,000		

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Table 3

**Service Procurement Program - Reserve (P-1R)**

<b>Nomenclature</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Remarks</b>
AF GLOBAL COMMAND & CONTROL S	525,000	525,000	525,000	
COMBAT TRAINING RANGES	700,000	700,000	700,000	
GCSS-AF FOS	100,000			
THEATER BATTLE MGT C2 SYS	1,997,000	12,340,000	12,711,000	
BASE INFORMATION INFRASTRUCTURE	11,118,000	538,000		
DEFENSE MESSAGE SYSTEM (DMS)	315,000	315,000	315,000	
NAVSTAR GPS SPACE	1,220,000	1,680,000	140,000	
CCTV/AUDIOVISUAL EQUIPMENT	1,026,000	1,018,000	1,009,000	
<b>OTHER BASE MAINTENANCE AND SUPPORT EQUIP</b>				
TEST EQUIPMENT - ITEMS LESS THAN \$5,000,000	4,491,000	4,400,000	4,577,000	
NIGHT VISION GOGGLES	76,000	185,000	125,000	
PERSONAL SAFETY AND RESCUE EQUIP - ITEMS LESS THAN \$5,000,000	188,000	418,000	428,000	
MECHANIZED MATERIAL HANDLING	600,000	63,000	64,000	
DEPOT PLANT & MATERIALS HANDLING EQ - ITEMS LESS THAN \$5,000,000	88,000	485,000	497,000	
ELECTRICAL EQUIPMENT - ITEMS LESS THAN \$5,000,000	98,000	390,000	392,000	
PHOTOGRAPHIC EQUIPMENT	150,000	233,000	239,000	
AIR CONDITIONERS	101,000	217,000	221,000	
BASE SUPPORT EQUIPMENT - ITEMS LESS THAN \$5,000,000	818,000	599,000	745,000	
<b>TOTAL</b>	<b>\$134,701,000</b>	<b>\$136,769,000</b>	<b>\$173,726,000</b>	

### National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks
C-130J	70,769,707			
F-16 SEM/EDX ENGINE TESTER	900,000			
SURVIVAL RADIO TRAINING PACKAGE (PRC-12)	330,000			
F-16 PYLON DISPENSER UNIVERSAL UPGRADES	2,970,000			
A-10 FMT/MTT CASNET	200,000			
A-10 AVIONICS BUS TO EW BUS CONNECTION	600,000			
WC-130 DIGITAL DEWPOINT HYGROMETER		650,000		
HC-130 LIGHTWEIGHT AIRBORNE RETRIEVAL SYSTEM		400,000		
F-16 SITUATIONAL AWARENESS DATA LINK UPGRADE		650,000		
C-130H3 SIMULATOR CONVERSION		2,700,000		
A-10 FUEL TANK FOAM INSTALLATION		180,000		
F-16 SOLID STATE VIDEO TAPE RECORDER		4,000,000		
C-130 SPRAY PAINT BOOTH		640,000		
ANTI-TERRORISM/FORCE PROTECTION EQUIPMENT		650,000		
MISCELLANEOUS VEHICLES		73,900		
F-16 LITENING POD UPGRADE MODIFICATION			14,760,000	
F-16 LITENING AT POD PROCUREMENT			14,300,000	
C-130E/H APN-241 RADAR REPLACEMENT			7,072,000	
F-16 DISPLAY PROCESSOR			6,400,000	
COMMAND POST CONSOLE UPGRADES			1,520,000	
DOBBINS TELEPHONE SWITCH UPGRADE			410,000	
ANTI-TERRORISM/FORCE PROTECTION EQUIPMENT			204,100	
<b>TOTAL</b>	<b>\$75,769,707</b>	<b>\$9,943,900</b>	<b>\$44,666,100</b>	

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Table 5

**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 Active 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.*

<b>Nomenclature</b>	<b>Equip No.</b>	<b>FY 2005 Qty</b>	<b>FY 2006 Qty</b>	<b>FY 2007 Qty</b>	<b>Remarks</b>
AIRLIFT, C-141C	C-141C		-8		C-141 drawdown
AIR REFUELING, KC-135R	KC-135R	8			
AIR REFUELING, KC-135E	KC-135E	-8			
THEATER AIRLIFT, C-130E	C-130E	-5	-1		
AIRLIFT, C-130H	C-130H	1	-2		OSD-directed transfers to SOCCOM
AIRLIFT, C-130J	C-130J	3			
AIRLIFT, C-5A	C-5A	2	5	-11	
AIRLIFT, C-5B	C-5B			8	
AIRLIFT, C-17A	C-17A		2	8	
FIGHTER, A-10A	A-10A	-6			
TRAINER, C-130 H2, ULT	C-130ULT	1			Conversion funded by Congressional Add

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
B-52				7,000,000	4,100,000		
A-10				6,500,000	5,300,000		
F-16				6,100,000	13,700,000		
C-5				27,500,000	16,500,000		
C-141				500,000			
C-130				25,900,000	12,400,000		
C-135				18,100,000	39,600,000		
H-60					3,000,000		
AIRCRAFT SUPPORT EQUIPMENT & FACILITIES				12,900,000	12,218,000		
BUSES					119,000		
LAW ENFORCEMENT VEHICLES					161,000		
TRUCK MULTI-STOP 1 TON 4X2				1,600,000	1,538,000		
ITEMS LESS THAN \$5,000,000				200,000	952,000		
ITEMS LESS THAN \$5,000,000				100,000	138,000		
ITEMS LESS THAN \$5,000,000				400,000	470,000		
TUNNER LOADER					3,004,000		
TRUCK, DUMP				100,000			
ITEMS LESS THAN \$5,000,000				100,000	137,000		
COMSEC EQUIPMENT				1,400,000			
NATIONAL AIRSPACE SYSTEM				1,600,000	1,602,000		
THEATER AIR CONTROL SYS IMPROVEMENT				1,900,000			
A GLOBAL COMMAND & CONTROL SYS				900,000	500,000		
AIR FORCE PHYSICAL SECURITY SYSTEM				700,000			
COMBAT TRAINING RANGES					853,000		
BASE LEVEL DATA AUTO PROGRAM				100,000	100,000		
THEATER BATTLE MGT C2 SYS				1,500,000	1,500,000		
BASE INFORMATION INFRASTRUCTURE				4,700,000			

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Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual
DEFENSE MESSAGE SYSTEM (DMS)					315,000		
NAVSTAR GPS SPACE				300,000			
CCTV/AUDIOVISUAL EQUIPMENT					500,000		
ITEMS LESS THAN \$5,000,000				200,000	164,000		
BASE/ALC CALIBRATION PACKAGE							
ITEMS LESS THAN \$5,000,000				300,000	1,270,000		
NIGHT VISION GOGGLES				200,000	53,000		
ITEMS LESS THAN \$5,000,000				800,000	1,291,000		
ITEMS LESS THAN \$5,000,000				500,000	351,000		
FLOODLIGHTS				400,000	106,000		
ITEMS LESS THAN \$5,000,000					246,000		
BASE PROCURED EQUIPMENT				3,000,000	5,822,000		
PHOTOGRAPHIC EQUIPMENT				300,000	150,000		
AIR CONDITIONERS				600,000	2,479,000		
ITEMS LESS THAN \$5,000,000				1,200,000	5,045,000		
A-10 UNIT TRAINING DEVICES-ECPS						1,340,000	1,200,000
HH-60G FLIGHT ENGINEER/GUNNER SEATS						1,385,000	1,200,000
C-130 ARMOR						240,000	
HC-130 FORWARD LOOKING INFRARED						1,500,000	
SCOPE SHIELD II TAC RADIOS						500,000	250,000
F-16 COLOR DISPLAY NRC AND INSTALL PROOF KIT							1,000,000
F-16 ALR-69 ANTENNA RELOCATION							664,000
F-16 DATA LINK UPGRADE							640,000
<b>TOTAL</b>				<b>\$127,600,000</b>	<b>\$135,684,000</b>	<b>\$4,965,000</b>	<b>\$4,954,000</b>

**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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 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 an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

<b>PR</b>	<b>Nomenclature</b>	<b>Total Req'd</b>	<b># Units Short</b>	<b>Unit Cost</b>	<b>Total Shortage Cost</b>	<b>Rationale/Justification</b>
1	WC-130 RADAR MODIFICATION	10	10	5,000,000	50,000,000	Required to correct weather radar problems and increase range distance for identification of hazards.
2	F-16 LITENING POD UPGRADE MODIFICATION	36	36	450,000	16,200,000	Improves system range, imaging, and processing resulting in increased capability and survivability.
3	F-16 LITENING AT POD PROCUREMENT	10	10	1,600,000	16,000,000	Required to support ongoing contingency operations and training.
4	F-16 DISPLAY PROCESSOR	72	72	161,111	11,600,000	Current display has reached max capacity and cannot fully utilize upgrades to aircraft systems.
5	A-10 LITENING AT POD PROCUREMENT	10	10	1,600,000	16,000,000	Required to support ongoing contingency operations and training.
6	LAND MOBILE RADIO COMPLIANCE	9,772	9,772	4,546	45,400,000	Systematic upgrade of LMR system infrastructure to meet NTIA narrow-band complaint directive.
7	C-5A AIRLIFT DEFENSIVE SYSTEMS	32	32	665,625	21,300,000	Provides protection against infrared-guided surface-to-air missile threats.
8	HH-60G 200 GALLON AUXILIARY FUEL TANK	15	15	140,000	2,100,000	Provides more cabin space for pararescueman to attend to injured personnel.
9	SECURE TACTICAL RADIOS	2,702	2,702	8,218	22,205,000	Deployable radios to replace the outdated/unsupportable Scope Shield 1 radios; meet new UTC requirements.
10	ANTI-TERRORISM/FORCE PROTECTION EQUIPMENT	N/A	N/A	N/A	9,700,000	To improve surveillance/detection technology and additional barrier protection on AFRC bases; needed for rapid response

## **Chapter 6**

### **United States Coast Guard Reserve**

#### **I. Coast Guard Overview**

a) Overall Coast Guard-wide Planning Guidance: The Coast Guard (CG), one of the five military services of the Armed Forces, is a unique and extremely valuable instrument of national security. As a military, multi-missioned, maritime service within the Department of Homeland Security (DHS), the CG's fundamental roles are to protect the American public, the environment, and U.S. economic and security interests in U.S. waters, foreign ports, and on the high seas. Because the CG is both a maritime law enforcement agency and a military service, it provides unique capabilities and a complementary role that is increasingly relied upon by the Service Chiefs and the Unified Commanders (Combatant Commanders).

A Memorandum of Agreement (MOA) between the DoD and the DHS, titled "Use of U.S. Coast Guard Capabilities and Resources in Support of the NMS," was signed by the Secretary of each Department on October 3, 1995, and amended February 27, 2001. This MOA identifies the national defense missions for the CG; among them is the mission of Port Operations, Security and Defense (POSD). Primarily an Anti-Terrorism/Force Protection (AT/FP) mission, POSD is conducted at the domestic Sea Ports of Embarkation (SPOE) and the overseas Sea Ports of Debarkation (SPOD) to ensure critical ports and harbors are free of hostile threats, terrorist actions, and safety deficiencies.

POSD is based on the doctrine of port security developed by the CG to provide waterborne and limited land-based protection for shipping and critical port facilities during a military operation. Hence POSD constitutes a strategic focus for both Major Theater War operations (MTW) and military operations other than war (MOOTW) or contingency operations. The lack of a port security capability was noted in lessons learned from Operations PROVIDE RELIEF/RESTORE HOPE (Somalia). In these types of operations, upwards of 90 percent of logistics sustainment for U.S. or allied forces passed through coastal ports and was potentially vulnerable to hostile actions.

b) Coast Guard Equipping Policy: Unique to the CG is a provision of law, found in 14 U.S.C. 712, which allows the Secretary of Homeland Security to involuntarily recall CG reservists to augment AC units in the event of a natural or man-made disaster. Equipment for these types of events or for normal operational surges is provided by AC CG units from existing unit inventory, from supporting units, or through contemporary procurement.

Equipment for domestic mission support is provided within the DHS budget. The DoD funding provides for equipment necessary for the CG to perform its defense responsibilities in support of CCs. This includes weapons systems aboard cutters, as well as communications systems that allow CG vessels to be interoperable with the U.S. Navy (USN) and allied fleets during joint operations. Additional military equipment, for use in

a combat zone, is required for Port Security Units (PSU), Maritime Safety and Security Teams (MSST), joint Navy/CG Harbor Defense Command Units (HDCU) and Naval Coastal Warfare Groups (NCWG), and Mobile Support Units (MSU). These items include small, highly maneuverable, well-armed Transportable Port Security Boats (TPSB), specialized uniforms, personal communications equipment, tents, and vehicles. In addition to procurement funds to capitalize major equipment items (e.g., small boats), the CG requires sustainment funding over the long term for their deployable PSUs and MSUs.

Because the RC mobilizes at AC commands as members of PSUs, HDCUs and MSUs, the CG's equipping requirements encompass both domestic emergency response and military contingency operations. In addition to the requirements for Naval Coastal Warfare (NCW) expeditionary operations, the CG has domestic military responsibilities relating to port safety and security, load-out of military cargo at strategic Ports, and response to WMD incidents. MSSTs are filling the role as the premier CONUS force protection of critical ports. The first of thirteen units was established in the summer of 2002, with six more added in fiscal year 2003. The final six MSSTs are planned for commissioning in fiscal year 2004. The MSST are active component units with 33 reservists assigned, and will be mentioned in this document only in reference to National Security and Port Security.

c) Plan to Fill Mobilization Requirements: The training employment of the RC, other than those assigned to the deployable units, is through direct augmentation of AC units using equipment in the AC inventory. The deployable units include six PSUs, nine HDCUs, two NCWGs and one MSU. The MSSTs have reservists who will deploy, if needed. There were four MSSTs established in FY 2002, with two more in FY 2003, and seven more planned for FY 2004. These deployable units are comprised of Selected Reserve (SELRES) personnel who may be involuntarily called to active duty. They train and mobilize as units.

Under 10 U.S.C. 12304, Order to Active Duty Authority, the RC may be mobilized when the President determines that it is necessary to augment AC forces for any operational mission.

d) Current Coast Guard Initiatives Affecting RC Equipment: Normally, for peacetime training, RC personnel use equipment already available at AC units. This is in keeping with the fundamental service approach under which SELRES personnel are assigned to AC units to train and augment while performing day-to-day CG missions. SELRES personnel constitute nearly 20 percent of the uniformed CG strength and are a critical asset to AC units as round-out personnel for peacetime operational missions and surge resources for natural or man-made disasters.

PSUs, HDCUs, NCWGs, and MSUs are traditional drilling units for which there are no AC counterparts. The CG, through normal procurement procedures, has provided personal protective equipment to some of these units.

e) Plan to Achieve Compatibility with AC: RC personnel are fully integrated into the AC units. Reservists are assigned to AC units to train and augment while performing day-to-day CG missions.

## II. Coast Guard Reserve (USCGR) Overview

### a) Current Status of the USCGR

(1) HDCUs: These units perform command and control for harbor defense and port security outside the continental United States in support of a CC. These forces, among the first to arrive, are deployed during the earliest stages of a contingency to provide safe and secure ports for off-loading troops and equipment into a military theater of operations.

Each HDCU is actually a blend of approximately 35 USCGR and USNR personnel. Of the 35 personnel, 17 are designated as USCGR positions. They act as the command and control element for POSD overseas. The commanding officer may be a member of the USCGR or the USNR. The HDCU has command and control over all NCW operating units for the mission, including PSUs, EOD units, Mobile Diving and Salvage Units, IBUs and MIUW units.

(2) NCWG: NCWG are staff units providing both operational and administrative oversight to assigned HDCUs. Each NCWG provides a deployable command and control staff whose core competency is to provide staff support to the Naval Coastal Warfare Commander. Each of the two NCWGs is assigned 12 CG personnel.

(3) CG PSUs: The PSU provides the actual interdiction capability for NCW operations. Each PSU operates six TPSBs. They arrive in theater with their own unit security capabilities. In the Persian Gulf War, self-sufficient PSUs were among the few rear-echelon units deployed. They also deployed detachments to the CENTCOM area of operations in response to the USS COLE incident.

In response to the events of 9/11, four of the six PSUs were deployed to protect CONUS SPODs. These deployments were the impetus for the recent creation of the MSSTs. PSUs deployed to Guantanamo Bay, Cuba, for detainee operations in support of OEF. One hundred percent of the PSUs were deployed in support of OIF.

(4) MSU: The MSU is an expeditionary unit equipped to provide hull, mechanical, and electrical (HM&E) logistics support to forward deployed CG 110-foot Patrol Boat squadrons. The MSU concept was established in 1987 to deploy for DoD operations. To date the MSU has proven its value for many peacetime and homeland defense missions including counter-narcotics (FRONTIER SHIELD 1996 and FRONTIER LANCE 1998) and alien migrant interdiction (ABLE MANNER 1994), in addition to other surge operations (SAIL BOSTON 1992, the 1996 Olympics, and OPSAIL 2000). Recently the MSU deployed overseas for OIF.

(5) WMD Response Capability: The CG is capable of responding to a WMD incident in two significant ways. First, CG On Scene Commanders (OSC) can respond at the local level in coordination with the Environmental Protection Agency or the Federal Emergency Management Agency (FEMA) as per Emergency Support Function (ESF) #10 of the Federal Response Plan and the National Contingency Plan. The OSCs will provide command and control elements only. The CG does not provide first responders. Second, the CG's National Strike Force has the capability, in its three Strike Teams (each consisting of approximately 40 RC and 45 AC personnel), to respond to chemical incidents. Strike Teams have been deployed in this capacity in Atlanta and Denver in support of special events.

The CG is in the process of developing a WMD Awareness Study, to identify and select appropriate sources of WMD information for all CG personnel. The study will do the following: determine fundamental aspects of WMD threat awareness information; evaluate existing sources of WMD training and informational products; select the product or products that best fit the need for CG-wide WMD threat awareness; determine the best use of WMD training funds; and suggest implementation of a WMD threat information program.

b) Changes Since Last NGRER: The CG has moved from the Department of Transportation to the DHS. None of the missions has changed. The CG has recently assigned both AC and RC personnel to NORTHCOM. This represents a continued role in homeland defense.

c) Future Years Program FY 2005– FY 2007: Current CC operational plans validate a requirement for all the HDCUs and PSUs that are currently available. Six PSUs are currently in operation (one each based in Virginia, Florida, Mississippi, Ohio, California, and Washington), and two additional PSU's will be established in FY 2004. All nine HDCUs and both NCWGs are organized and trained, with very limited amounts of equipment. Five HDCUs are located on the Atlantic and Gulf coasts, with four located on the Pacific Coast. One NCWG is located on each coast.

The CG has one MSU. Stand-up of a second RC MSU has been considered, but has been deferred due to funding constraints.

Recent CC Operations Plans (OPLAN) have indicated an increased need for PSU AT/FP support. In addition, the recent shift in the National Defense Strategy now calls for an even greater capability for PSUs and MSSTs to quickly respond to port security and safety contingency operations in CONUS and abroad. The CG has been working with the USN Seabee community to create a standardized loadout plan that will increase the ability of the PSU community to meet the short notice USN and DoD requests for support. Therefore, the CG plans to seek FY 2004 funding for two additional suites of PSU equipment that will be packed and ready for deployment. This would increase a PSU's ability to meet a 96-hour deployment window. Additionally, as part of the Coastal Defense and Port Security initiatives to better safeguard our nation's ports

and borders from both transnational and asymmetric warfare threats, the CG must improve its ability to better respond to increased risks to national security.



CC OPLANs cite requirements to provide port security and harbor defense capabilities in several SPODs simultaneously to support contingency operations. The total number of ports that have been determined to be important to United States defense requirements far exceeds the number of CG PSUs that are currently authorized. Although other naval elements could be employed to temporarily meet this deficiency, an increased number of PSUs is needed, to ensure that those critical USN resources remain available to satisfy their own primary defense requirements.

Planning for sustained operations includes having more defense resources available to conduct operations than are actually anticipated to be needed. This strategy allows for backfill and response to unforeseen contingencies. Despite aggressive training and effective management, it is unlikely that all authorized PSUs will be at the highest readiness levels to be available for operations at any given time. Reconstituting forces will be essential to sustain CG operations amidst any hostile actions. Although contingency plans have been developed to provide follow-on forces required for on-scene regular relief, there is a need for additional capacity to support significant backfill that may be required during future hostilities.

d) Shortfalls

(1) PSU Strength: In the Persian Gulf War, 100 percent of the CG PSU capability was deployed, leaving no backup for normal rotation of personnel/units. In response to the terrorist attacks of September 11, 2001, four of the six PSUs deployed. Continued deployment to Guantanamo Bay, Cuba, operation NE/EF, and meeting the port security rolls attribute to the strength shortfall. Additionally, four of the six PSUs were deployed in support of OIF, leaving only the remaining two as backup. The CC's War Plans have a requirement for 13 PSUs.

(2) PSU Equipment: The CG has identified requirements for miscellaneous equipment sets for special port security operational functions. These sets include equipment for force protection: safety; intelligence; communications; medical; Chemical, Biological, and Radiological (CBR) equipment; personnel support facilities (tents, field kitchens, Automatic Data Processing equipment, Meals-Ready-To-Eat, etc.); and associated equipment maintenance.

(3) CBR Equipment: CBR equipment on-hand for RC personnel assigned to the Marine Safety Offices (MSO) who have a DoD Strategic load-out responsibility are drastically below requirements. During a military load-out contingency, the current mobilization requirements call for more than 3,500 RC personnel. In order for the CG to meet his CONUS strategic load-out port commitments, a substantial stocking of CBR Mission Oriented Protective Posture (MOPP) gear would be required for this force of over 3,500 personnel.

Additionally, CBR equipment for nine HDCUs and two NCW Groups is also below requirements. MOPP gear is required to outfit this force to meet their requirements. *Table 8* depicts the current shortfalls.

(4) MSU Equipment: Current strategic planning in the Joint Strategic Capabilities Plan and the Unified Combatant Commanders' OPLANS obligates the CG to support operations for two complete ten cutter squadrons. Currently, the CG maintains one MSU capable of only supporting one squadron of no more than six Patrol Boat cutters (WPB). These limitations are due to equipment and manpower shortfalls. The CG would like to upgrade the program in order to meet its full obligation to DoD. In addition to supporting two 110-foot cutter squadrons, the MSU theoretically could support other CG standard boats if properly trained, staffed and equipped. Current MSU equipment shortfalls are shown in *Table 8*.

e) Summary/Conclusions: The CG continues to analyze emerging missions and roles in light of recent events. Improving capabilities to meet national security requirements and optimizing resources is the CG's challenge for the future. Having the right equipment on-hand for the CG men and women to do the job safely and effectively is the challenge in this resource deficient climate.

The CG has not received any funding through the NGREA. However, this report points out the gaps that exist between requirements and current inventories. These shortages directly impair the CG's ability to meet worldwide CC requirements and United States national security concerns. History has shown that failure to meet force protection costs lives, property, and commerce to the United States and its allies.

USCGR

Table 1

**Consolidated Major Item Inventory and Requirements**

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet the full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component. Unit cost values are in dollars.*

Nomenclature	Equip No.	FY 2005 Unit Cost	Begin FY 2005 QTY O/H	Begin FY 2006 QTY O/H	Begin FY 2007 QTY O/H	End FY 2007 QTY O/H	End FY 2007 QTY REQ
<b>PORT SECURITY UNITS</b>							
25' TPSB (6 per unit)		75,000	54	54	54	54	54
175HP OUTBOARD MOTOR (2 per boat/6 total spares)		8,000	166	166	166	166	166
VEHICLE, F350 PICKUP (2 per unit)		45,000	18	18	18	18	18
VEHICLE, F350 12-PASSENGER VAN (1 per unit)		45,000	9	9	9	9	9
VEHICLE, F550 STAKEBED (1 per unit)		45,000	9	9	9	9	9
RADIO, TRI-BAND (1 per boat/2 total spares)		25,000	72	72	72	72	72
RADIO, VHF/FM SPECTRA (1 per boat, 4 total spares)		3,500	90	90	90	90	90
RADIO, TRI-BAND, BASE (1 per unit/1 spare)		25,000	18	18	18	18	18
RADIO, VHF/FM SPECTRA, BASE (1 per unit/1 spare)		3,500	18	18	18	18	18
PSU EQUIPMENT PACKAGE		1,715,000	8	8	8	8	8
<b>MOBILE SUPPORT UNITS</b>							
TRAILER, CONNEX BOX		30,000	23	23	23	23	23
TRUCK, PICK-UP		25,000	2	2	2	2	3
TRUCK, STAKEBED		30,000	4	4	4	4	4
TRUCK, TRACTOR TRAILER		105,000	2	2	2	2	2
MSU EQUIPMENT PACKAGE		213,500	0	0	0	0	1
FORKLIFT, 10,000 LB		20,000	1	1	1	1	2
GENERATOR SET 160KW & SPARE PARTS KIT		23,000	2	2	2	2	2
WELDER, GAS POWERED		3,000	1	1	1	1	2
TRAILER HEATING SYSTEM		50,000	0	0	0	0	1
<b>WMD RESPONSE GEAR</b>							
LEVEL A SUITS		600	126	126	126	126	126
CHEM-BIO DETECTION EQUIPMENT		9,000	2	2	2	2	2
LEVEL A COMMUNICATIONS SUITES		30,000	0	0	0	0	3

**USCGR**

Table 2

**Average Age of Equipment**

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for FY 2005.*

Nomenclature	Equip No.	Average Age	Remarks
<b>PORT SECURITY UNITS</b>			
25' TPSB		2	
175HP OUTBOARD MOTOR		3	
VEHICLE, F350 PICKUP		5	
VEHICLE, F350 12-PASSENGER VAN		5	
VEHICLE, F550 STAKEBED		5	
RADIO, TRI-BAND (1 per boat/2 spares)		1	
RADIO, VHF/FM SPECTRA		3	
RADIO, TRI-BAND, BASE		3	
<b>MOBILE SUPPORT UNITS</b>			
TRAILER, CONNEX BOX		19	
TRUCK, PICK-UP		14	
TRUCK, STAKEBED		11	

**USCGR**

Table 3

**Service Procurement Program - Reserve (P-1R)**

*NOTE: This table identifies the dollar value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 2005 President's Budget Submission. All cost values are in dollars, and ammunition procurements have been excluded. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; e.g., items procured in FY 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007.*

<b>Nomenclature</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Remarks</b>

**Table 3 not applicable for USCGR**

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar value of equipment originally programmed to be procured 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 2005 would be expected to arrive in RC inventories in FY 2006 or FY 2007. All values are costs in dollars.*

Nomenclature	FY 2002	FY 2003	FY 2004	Remarks

**Table 4 not applicable for 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 Active 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 2005 Qty	FY 2006 Qty	FY 2007 Qty	Remarks

**Service has no planned transfers or withdrawals for the years FY 2005 thru FY 2007**

**USCGR**

Table 6

**FY 2001 Planned vs Actual Procurements and Transfers**

*NOTE: This table compares what the Service planned to procure and transfer to the RC in FY 2001 with actual procurements and transfers. FY 2001 is selected as these are the most recent funds to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2003. Procurement and NGREA columns reflect cost values in dollars.*

Nomenclature	Equip No.	FY 2001 Transfers		FY 2001 Procurements		FY 2001 NGREA	
		Plan	Actual	Plan	Actual	Plan	Actual

**USCGR had no planned or actual transfers or procurements of major equipment during FY 2001**

**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 able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

Required Item Nomenclature	Reqd Item Equip No.	Substitute Item Nomenclature	Substitute Item Equip No.	FY 2005 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 an RC top ten prioritized (PR) shortage list for major items of equipment 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 data submitted by the Service.*

<b>PR</b>	<b>Nomenclature</b>	<b>Total Req'd</b>	<b># Units Short</b>	<b>Unit Cost</b>	<b>Total Shortage Cost</b>	<b>Rationale/Justification</b>
	<b>MOBILE SUPPORT UNIT EQUIPMENT</b>					
1	TRUCK, PICK-UP	3	1	25,000	25,000	
2	FORKLIFT, 10,000 LB	2	1	20,000	20,000	
3	WELDER, GAS POWERED	2	1	3,000	3,000	
4	MSU EQUIPMENT PACKAGE	1	1	213,500	213,500	
	<b>WMD RESPONSE GEAR</b>					
5	LEVEL A COMMUNICATIONS SUITES	3	3	30,000	90,000	
6	TRAILER HEATING SYSTEM	1	1	50,000	50,000	

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## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
AAA	Anti-Aircraft Artillery
AAAV	Advanced Amphibious Assault Vehicle
AAI	Air to Air Interrogator
AAO	Army Acquisition Objective
AAO	Approved Acquisition Objective
AATC	Air National Guard/Air Force Reserve Test Center
AAV	Assault Amphibian Vehicle
AAAV	Advanced Amphibious Assault Vehicle
AC	Active Component
ACC	Air Combat Command
ACIU	Advanced Central Interface Unit
ACS	Air Control Squadron
ACTS	Air Combat Training System
ACW	Air Control Wing
ADI	Attitude Directional Indicator
ADRS	ARNG Division Redesign Study
AE	Aeromedical
AEF	Aerospace Expeditionary Force
AEP	Army Equipping Policy
AETC	Air Education and Training Command
AEU	Advanced Electronics Unit
AF	Air Force
AFB	Air Force Base
AFFS	Airborne Fire Fighting System
AFIWC	Air Force Information Warfare Center
AFR	Air Force Reserve
AFRC	Air Force Reserve Command
AFRL	Air Force Research Laboratory
AFSPC	Air Force Space Command
AFSOC	Air Force Special Operations Command
AGRI	Army National Guard Restructuring Initiative
AIM9X	Air Intercept Missile (9X Series)
AIFF	Advanced Identification/Friend or Foe
AIP	Anti-Surface Warfare Improvement Program
AKITS	Alpena Kadena Interim Training System
AM	Amplitude Modulated
AMC	Air Mobility Command
AMC	Army Materiel Command
AMCM	Airborne Mine Countermeasures
AMP	Avionics Modernization Program
AMRAAM	Advanced Medium Range Air-to-Air Missile
AMSA	Area Maintenance Support Activities
ANG	Air National Guard
ANGB	Air National Guard Base
ANG/AQ	Army National Guard/Acquisition Directorate
AOC	Air Operations Center
AOR	Area of Responsibility
APN	Aircraft Procurement - Navy

## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
ARB	Air Reserve Base
ARC	Air Reserve Component
ARLOG	Army Reserve Logistics
ARNG	Army National Guard
ASCS	Airborne Sensor and Control System
ASOC	Air Support Operations Center
ATACM	Army Tactical Missile Systems
ATC	Air Traffic Control
AT-FLIR	Advance Targeting Forward-Looking Infrared
ATFP	Anti-Terrorism/Force Protection
ATGM	Anti-Tank Guided Missile
ATLAS	All Terrain Lifter, Army System
ATLASS	Asset Tracking Logistics and Supply System
ATO	Assisted Take-off
ATP	Advanced Targeting Pod
AVCRAD	Aviation Classification Repair Activity Depot
AVIM	Aviation Intermediate Maintenance
AVUM	Aviation Unit Maintenance
AVLB	Armored Vehicle Launched Bridges
AW	Airlift Wing
AWACS	Airborne Warning and Control System
BES	Budget Estimate Submission
BFV	Bradley Fighting Vehicle
BIDS	Biological Integrated Detection System
BLOS	Beyond Line-of-Sight
BNBC	Bioenvironmental Engineering Nuclear/Biological/Chemical
BOL	Bolt On Launcher
BW	Bomb Wing
BY	Budget Year
C2	Command and Control
C4I	Command, Control, Communication, Computers, and Intelligence
C4ISR	Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance
CA	Civil Affairs
CACS	Command and Control Squadron
CAF	Combat Air Force
CAM	Chemical Agent Monitors
CAVTR	Color Airborne Video-Tape Recorder
CBMS	Common Battle Management System
CBMU	Construction Battalion Maintenance Unit
CBR	Chemical, Biological, and Radiological
CBT	Common Bridge Transport
CBT	Computer Based Training
CC	Combatant Commander
CCIP	Common Configuration Improvement Program
CCIU	Commercial Central Interface Unit

## Appendix B Acronym Glossary

<b>Acronym</b>	<b>Nomenclature</b>
CDS	Combat Development System
C-E	Communications-Electronics Equipment
CE	Construction Equipment
CESE	Civil Engineering Support Equipment
CEUCE	Common End User Computer Equipment
CG	Coast Guard
CHS	Controlled Humidity Storage
CID	Combat Identification
CINC	Commander-in-Chief
CIS	Combat Intelligence System
CMC	Commandant of the Marine Corps
CMS	Countermeasures Management System
CNO	Chief of Naval Operations
CNS/ATM	Communication, Navigation, Surveillance/Air Traffic Management
CONPLAN	Contingency Plan
CONUS	Continental United States
COTS	Commercial Off-the-Shelf
CP-EMEDS	Chemically Protected Expeditionary Medical Support
CQ	Combat Quadrangle
CRAG	Compass, Radar and Global Positioning System
CRTC	Combat Readiness Training Center
CS	Combat Support
CSA	Army Chief of Staff
CSAR	Combat Search and Rescue
CSEL	Combat Survivor Evader Locator
CSS	Combat Service Support
CST	Civil Support Team
CUCV	Commercial Utility Cargo Vehicles
CUPID	Combat Upgrade Plan Integration Details
CVW	Carrier Air Wing
CVWR-20	Carrier Air Wing Reserve Twenty
DA	Department of the Army
DAMPL	Department of the Army Master Priority List
DCSOPS	Deputy Chief of Staff for Operations
DEPMEDS	Deployable Medical System
DEUCE	Deployable Universal Combat Earthmover
DHS	Department of Homeland Security
DISA	Defense Information Systems Agency
DMO	Distributed Mission Operations
DMT	Distributed Mission Training
DOD	Department of Defense
DON	Department of the Navy
DOT	Department of Transportation
DPEM	Depot Purchased Maintenance Equipment
DSCS	Defense Satellite Communications System
DSMS	Digital Stores Management System
DSP	Defense Support Program

## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
DTOC	Distributed Training Operations Center
EAC	Echelons Above Corps
EAD	Echelons Above Division
EAF	Expeditionary Aerospace Force
EC	Electronic Combat
ECC	Equipment Cost Code
ECM	Electronic Countermeasures
ECP	Engineer Change Proposal
ECS	Equipment Concentration Site
EFDS	Expeditionary Force Development System
EFI	Electronic Flight Instrument
ELSF	Expeditionary Logistics Support Force
EMM	Engineer Mission Module
EMW	Expeditionary Maneuver Warfare
EMOC	Electronic Maintenance Operations Center
EOD	Explosive Ordnance Disposal
EODMU	Explosive Ordnance Disposal Mobile Unit
EOH	Equipment On-hand
EPA	Environmental Protection Agency
EPLRS	Enhanced Position Location Reporting System
ERC	Equipment Readiness Code
eSB	Enhanced Separate Brigade
ESF	Emergency Support Function
ESL	Expected Service Life
ESP	Extended Service Program
EW	Electronic Warfare
EWMS	Electronic Warfare Management System
FAADC2	Forward Area Air Defense Command and Control
FAADC2I	Forward Area Air Defense Command, Control and Intelligence
FAASV	Forward Area Ammunition Support Vehicle
FAR	Federal Air Regulation
FBI	Federal Bureau of Investigation
FCS	Future Combat System
FDL	Fighter Data Link
FEMA	Federal Emergency Management Agency
FFG	Guided Missile Frigate
FFOV	Full Field Of Vision
FLIR	Forward Looking Infra-Red
FM	Frequency Modulated
FMT	Full Mission Trainer
FMTV	Family of Medium Tactical Vehicles
FOC	Full Operational Capability
FORCES	Force Operational Readiness and Combat Effectiveness Simulation
FP	Force Package
FRRRI	Federal Reserve Restructuring Initiative
FRU	Fleet Readiness Unit

## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
FSP	Force Support Package
FSSP	Fuel System Supply Point
FTD	Flight Training Device
FTU	Flying Training Unit
FTU	Formal Training Unit
FW	Fighter Wing
FY	Fiscal Year
FYDP	Future Years Defense Plan
GATM	Global Air Traffic Management
GCCS-MC	Global Combat Service Support-Marine Corps
G-FAC	Ground -- Forward Air Control
GPS	Global Positioning Systems
GSAC	General Support Aviation Company
GWOT	Global War on Terrorism
HARM	High Speed Anti-Radiation Missile
HDC	Harbor Defense Command
HDCU	Harbor Defense Command Unit
HEMTT	Heavy Expanded Mobility Tactical Truck
HET	Heavy Equipment Transporter
HETS	Heavy Equipment Transporter System
HF	High Frequency
HIMARS	High Mobility Artillery Rocket System
HMCS	Helmet Mounted Cueing System
HMDS	Helmet Mounted Display System
HM&E	Hull, Mechanical and Electrical
HMMWV	High Mobility, Multi-Purpose Wheeled Vehicle
HMH	Marine Heavy Helicopter
HNS	Host Nation Support
HNVS	Helicopter Night Vision Systems
HOTAS	Hands-on-Throttle-and-Stick
HQDA	Headquarters, Department of the Army
HIS	Hyper spectral Imagery
HTS	HARM Targeting System
HUD	Heads Up Display
IAP	International Airport
IBCT	Interim Brigade Combat Team
IBU	Inshore Boat Unit
ICS	Interim Contractor Support
ICV	Infantry Carrier Vehicle
ID	Identification
IDM	Improved Data Modem
IDT	Inactive Duty Training
IFF	Identification Friend or Foe
IGS	Intragovernmental Solution
IHFR	Improved High Frequency Radio

## Appendix B Acronym Glossary

<b>Acronym</b>	<b>Nomenclature</b>
ILC	Integrated Logistics Capabilities
IMA	Intermediate Maintenance Activity
INS	Inertial Navigation System
IOC	Initial Operational Capability
IOS	Information Operations Squadron
ITAS	Improved Target Acquisition System
IR	Infrared
IRCM	Infrared Countermeasures and Dispensers
JATO	Jet Assisted Take-off
JBPDS	Joint Biological Point Detection System
JCS	Joint Chiefs of Staff
JDAM	Joint Directed Attack Munitions
JFACC	Joint Force Air Component Commander
JFNU	Joint Fires Network Unit
JHMCS	Joint Helmet Mounted Cueing System
JRVIO	Joint Reserve Virtual Information Operations
JSCP	Joint Strategic Capabilities Plan
JSF	Joint Strike Fighter
JSTARS	Joint Surveillance Target Attack Radar System
JTCTS	Joint Tactical Combat Training System
JTIDS	Joint Tactical Information Distribution System
JTRS	Joint Tactical Radio System
JVMF	Joint Variable Message format
KW	Kilowatt
LCAC	Landing Craft, Air Cushion
LAIRCM	Large Aircraft Infrared Countermeasures
LANTIRN	Low Altitude Navigation and Targeting Infra-red for Night
LARS	Light Armored Reconnaissance
LARS	Lightweight Airborne Recovery System
LAV	Light Armored Vehicle
LIN	Line Item Number
LMTV	Light Medium Tactical Vehicle
LOSAT	Line of Sight Antitank Weapon System
LSS	Littoral Surveillance System
LST	Laser Spot Track
LST	Newport Class Tank Landing Ships
LW 55	Lightweight 55
MACI	Military Adaptation of Commercial Items
MACS	Mobile Approach Control System
MADARS	Malfunction Detection, Analysis and Recording System
MAFFS	Modular Airborne Fire Fighting System
MAGTF	Marine Air-Ground Task Force
MAJCOM	Major Command
MARCORLOGBASES	Marine Corps Logistics Bases
MARFORRES	Marine Forces Reserve

## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
MAST	Mobile Ashore Support Terminal
MATS	Maintenance and Aircrew Training System
MCCC	Mobile Consolidated Command Center
MCM	Mine Countermeasures
MCREM-R	Marine Corps Readiness Equipment Module-Reserves
MCS	Modular Causeway System
MCS 21	Marine Corps Strategy 21
MCU	Multiple-Component Unit
MCS	Modular Control System
MDSU	Mobile Diving and Salvage Unit
MEDEVAC	Medical Evacuation
MFD	Multi-Function Display
MFDM	MLRS Family of Munitions
M-GATOR	Military Gator
MGS	Mobile Gun System
MHC	Coastal Mine Hunter
MHE	Materiel Handling Equipment
MIDS	Multifunctional Informational Distribution Systems
MIE	Major Items of Equipment
MILSTAR	Military , Strategic, Tactical and Relay
MILSTD	Military Standard
MIUW	Mobile Inshore Undersea Warfare
MLB	Mobile Light Brigade
MLRS	Multiple Launch Rocket System
MMS	Medical Materiel Sets
MOA	Memorandum of Agreement
MOOTW	Military Operations Other Than War
MOPP	Mission Oriented Protective Posture
MoTES	Mobile Threat Emitter System
MOU	Memorandum of Understanding
MP	Military Police
MPF	Major Program Force
MPF	Maritime Preposition Force
MSE	Mobile Subscriber Equipment
MSO	Marine Safety Office
MSU	Mobile Support Unit
MTBF	Mean Time Between Failure
MTC	Mission Training Center
MTEC	Mission Training Engineering Center
MTOE	Modified Table of Organization and Equipment
MTT	Multi-Task Trainer
MTS	Mobile Tracking System
MTV	Medium Tactical Vehicle
MTVR	Medium Tactical Vehicle Replacement
MTW	Major Theater War
MUTES	Multiple Threats Emitter System
NAF	Numbered Air Force

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### Acronym Glossary

<b>Acronym</b>	<b>Nomenclature</b>
NAS	Naval Air Station
NAVELSF	Naval Expeditionary Logistics Force
NAVICS	Navigation Integration and Coordination System
NCA	National Command Authority
NCF	Naval Construction Force
NCFSU	Naval Construction Force Support Unit
NCR	Naval Construction Regiments
NCW	Naval Coastal Warfare
NCWC	Naval Coastal Warfare Commander
NCWG	Naval Coastal Warfare Group
NGB	National Guard Bureau
NGREA	National Guard and Reserve Equipment Appropriation
NGRER	National Guard Reserve Equipment Report
NIPRNET	Non-Secure Internet Protocol Router Network
NMCB	Naval Mobile Construction Battalion
NMS	National Military Strategy
NORAD	North American Air Defense Command
NR	Naval Reserve
NRF	Naval Reserve Force
NRO	National Reconnaissance Office
NSA	National Security Agency
NSF	National Science Foundation
NSN	National Stock Number
NVG	Night Vision Goggles
NVIS	Night Vision Imaging System
O&M	Operations and Maintenance
OCONUS	Outside the Continental United States
ODS	Operation Desert Shield/Storm
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMFTS	Operational Maneuver From the Sea
OPLAN	Operation Plan
OPN	Other Procurement-Navy
OPTEMPO	Operations Tempo
ORI	Operational Readiness Inspection
OSC	On Scene Commander
OSD/RA	Office of Secretary of Defense/Reserve Affairs
P-1	Service Procurement Projection
P-1R	Service Procurement Program - Reserve
P3I	Pre-Planned Product Improvement
PAA	Primary Aircraft Authorized
PALCON	Palletized Container
PATS	Precision Attack Targeting System
PCDS	Personal Computer Debrief System
PDD	Presidential Decision Directive
PE	Precision Engagement

## Appendix B Acronym Glossary

<b>Acronym</b>	<b>Nomenclature</b>
PIDS	Pylon Integrated Dispensing System
PLS	Palletized Load System
PMC	Procurement Marine Corps
POM	Program Objective Memorandum
POP	Proof of Principle
POSD	Port Operations Security and Defense
PPBS	Planning, Programming, Budgeting System
PRC	Presidential Reserve Call-Up
PRESBUD	President's Budget
PSU	Port Security Unit
QDR	Quadrennial Defense Review
QUADCON	Quadruple Container
RAM/RS	Reliability-Availability-Maintainability/Rebuild to Standard
RANS	Range Squadron
RBE	Remain Behind Equipment
RC	Reserve components
RDT	Requirement Development Team
RDT&E	Research, Development, Test & Evaluation
RERP	Reliability Enhancement Re-engining Program
RF	Radio Frequency
RJ	Rivet Joint
RML	Revolution of Military Logistics
RQG	Rescue Group
RQS	Rescue Squadron
RQW	Rescue Wing
RROC	Reserve Requirement Oversight Council
RRRB	Reserve Requirements Review Board
RSMS	Readiness Sustainment Maintenance Site
RSSC	Radar Sonar Surveillance Center
RSTA	Reconnaissance, Surveillance Target Acquisition
RTC	Regional Training Center
RTC	Reserve Training Center
RTCH	Rough Terrain Container Handler
RWR	Radar Warning Receiver
SADL	Situation Awareness Data Link
SAR	Search and Rescue
SARSS	Standard Army Retail Supply System
SATCOM	Satellite Communications
SBCT	Stryker Brigade Combat Team
SBIRS	Space Based Infrared Radar System
SELRES	Selected Reservist
SIGINT	Signals Intelligence
SINCGARS	Single Channel Ground-Air Radio System
SIPRNET	Secret Internet Protocol Router Network
SLEP	Service Life Extension Program

## Appendix B

### Acronym Glossary

<b>Acronym</b>	<b>Nomenclature</b>
SMCR	Selected Marine Corps Reserve
SOPS	Space Operations Squadron
SoS	System of Systems
SOW	Special Operations Wing
SPO	System Program Office
SPOD	Sea Ports of Debarkation
SPOE	Sea Ports of Embarkation
SPS	Self-Protection System
SS I	Scope Shield I
SS II	Scope Shield II
STAR	Structural Augmentation Roadmap
STAR-T	Super-High Frequency Tri-band Advanced Range Extension Terminal
STS	Special Tactics Squadron
SWS	Space Warning Squadron
T/A	Training Allowance
TAA-XX	Total Army Analysis (XX= Year)
TACAIR	Tactical Air
TACP	Tactical Air Control Party
TACS	Theatre Air Control System
TADIL-J	Tactical Digital Information Link-J
TADSS	Training Aids, Devices, Simulators and Simulations
TAIS	Tactical Airspace Integration System
TAM	Table of Authorized Materiel
TARS	Theater Airborne Reconnaissance System
TAS	Tool Accountability System
TAWS	Terrain Avoidance Warning System
TBMCS	Theater Battle Management Core System
TCAS	Traffic Alert & Collision Avoidance System
TFFT	Tactical Fire Fighting Truck
TMPG	Transport Multi-Platform Gateway
T/O	Table of Organization
T/O&E	Table of Organization and Equipment
TOA	Total Obligation Authority
TOA	Table of Allowance
TOE	Table of Equipment
TOW	Tube-Launched Optically-Tracked Wire-Guided Missile
TPFDL	Time Phased Force Deployment List
TPSB	Transportable Port Security Boat
TQG	Tactical Quiet Generator
TRADOC	Training and Doctrine Command
TRAINS	Threat Reaction Analysis Indicator System
TRITAC	Tri-Service Tactical Communications Program
TTS	Total Training System
TUAV	Tactical Unmanned Aerial Vehicle
TWS	Thermal Weapon Sight
TWV	Tactical Wheeled Vehicle

## **Appendix B**

### **Acronym Glossary**

<b>Acronym</b>	<b>Nomenclature</b>
UAV	Unmanned Aerial Vehicle
UHF	Ultra High Frequency
UFR	Unfunded Requirement
ULLS-A	Unit Level Logistics System-Aviation
ULT	Unit Level Trainer
UMTE	Unmanned Threat Emitter
USAF	United States Air Force
USAFE	United States Air Force - Europe
USAR	United States Army Reserve
USCG	United States Coast Guard
USCGR	United States Coast Guard Reserve
USF	Unit Set Fielding
USMCR	United States Marine Corps Reserve
USN	United States Navy
USNR	United States Navy Reserve
UTD	Unit Training Device
VFA	Fixed Wing Fighter Attack
VHF	Very High Frequency
VMGR	Marine Aerial Refueler Transport
VSTOL	Vertical/Short Take Off and Landing
VTC	Video Tele-Conference
VTR	Video Tape Recording
WCMD	Wind Corrected Munitions Dispense
WMD	Weapons of Mass Destruction
WPB	Patrol Boat
WRM	War Reserve Materiel
WRMS	War Reserve Materiel Stock
WRS	Weather Reconnaissance Squadron
WST	Weapon System Trainers
WTC	Weapons and Tactics Conference