

CRS Report for Congress

U.S. Army and Marine Corps Equipment Requirements: Background and Issues for Congress

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Andrew Feickert
Specialist in National Defense
Foreign Affairs, Defense, and Trade Division



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Summary

The United States Army and Marine Corps have been at war — first in Afghanistan and then Iraq — since November 2001. According to the Chief of Staff of the Army, General Peter Schoomaker, “for the last five years, a period longer than World War II, the Army has had as many as 18 to 20 brigade combat teams deployed on a rotational basis in combat conditions.” In a similar manner, the Marine Corps has deployed its forces and equipment in what has been described as “the harsh operating environments of Iraq and Afghanistan” where the heat, sand, and dust as well as operational rates “well in excess of peacetime rates” has taken a heavy toll on the Army’s and Marine’s equipment, which, in some cases, was more than 20 years old when the conflicts first began.

At the same time that the Army and Marine Corps are contending with war-related equipment issues, the Army is reconfiguring its forces to a brigade-based force which could result in requirements for additional equipment. Moreover, both services have undertaken modernization programs which could generate additional equipment requirements. Equipping Reserve and National Guard units also presents challenges to the services. The Army and Marine Corps are also undertaking efforts to re-equip their pre-positioned stocks which were drawn upon to provide equipment for use in Afghanistan and Iraq. In addition, the transfer of large quantities of U.S. military equipment to Iraqi defense forces and possibly Afghan forces could also be an element of the overall equipment requirements. Congress, in its appropriation, authorization, and oversight roles may be faced with some of the following issues:

- Should the Army and Marine Corps reconsider the policy of keeping large quantities of equipment in theater instead of rotating it home when units redeploy from Iraq and Afghanistan?;
- How and when will reserve forces will be re-equipped?;
- The impact on the Army and Marines of equipping Iraqi and, potentially, Afghan security forces?; and
- How the Army can fully equip its Modular units?

This report will not be updated.

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U.S. Army and Marine Corps Equipment Requirements: Background and Issues for Congress

Background

The United States Army and Marine Corps have been at war — first in Afghanistan and, then Iraq — since November 2001. According to the Chief of Staff of the Army, General Peter Schoomaker, “for the last five years, a period longer than World War II, the Army has had as many as 18 to 20 brigade¹ combat teams deployed on a rotational basis in combat conditions.”² Including other supporting formations, the Army currently has almost 35 brigades’ worth of soldiers and equipment deployed.³ In a similar manner, the Marine Corps has deployed its forces and equipment in what has been described as “the harsh operating environments of Iraq and Afghanistan” where the heat, sand, and dust as well as operational rates “well in excess of peacetime rates” has taken a heavy toll on the Army’s and Marine’s equipment, which, in some cases, was more than 20 years old when the conflicts first began.⁴

At the same time that the Army and Marine Corps are contending with war-related equipment issues, the Army is reorganizing and the Marine Corps is adjusting its training, tactics, and equipment to more effectively conduct irregular warfare and both of these initiatives could result in requirements for additional equipment. Both services have also undertaken modernization programs, such as the Army’s Future Combat System (FCS) program, which could generate additional equipment requirements. Equipping Reserve and National Guard units also presents challenges to the services. Traditionally, the Army National Guard and Reserve have been characterized as under-equipped and often times equipped with older equipment than their Active component counterparts. General Schoomaker has reportedly committed to both man and equip the Army Reserves and National Guard in a similar manner to the Active component, which could result in additional equipment

¹ A brigade consists of between 3,000 to 5,000 soldiers.

² Statement by General Peter J. Schoomaker, Chief of Staff of the Army, Before the Committee on Armed Services, United States House of Representatives, “The Army’s Reset Strategy and Plan for Funding Reset Requirements,” June 27, 2006.

³ Ibid.

⁴ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006.

requirements.⁵ The Army and Marine Corps are also undertaking efforts to re-equip their pre-positioned stocks which were drawn upon to provide equipment for use in Afghanistan and Iraq. In addition, the possible transfer of significant quantities of U.S. military equip to Iraqi and possibly Afghan defense forces could also be an element affecting the overall equipment requirements of the services. The Army and Marines have a number of equipment-related challenges to rectify which may require significant funding and management efforts.

Historical Perspective on Equipment

Equipping Army and Marine units has been a long-standing concern of Congress that has taken on added importance as weapons and equipment have become exponentially more sophisticated and more expensive. According to Army leadership:

Historically, the Army has been under resourced - and it is a fact that the decade preceding the attacks of September 11, 2001 was no exception. Army investment accounts were underfunded by approximately \$ 100 billion and 500,000 soldiers were reduced from total Army endstrength. There were about \$56 billion in equipment shortages at the opening of the ground campaign in Iraq in the spring of 2003.⁶

With few exceptions, almost all Army and Marine Corps units have historically faced equipment shortages. In these cases, units either “made do” with the equipment on hand or, if leadership directed, equipment could be transferred from one unit to another — referred to as “cross leveling” — to increase a unit’s equipment holdings at the expense of another unit or organization. Reserve forces, which in the past constituted the nation’s “Strategic Reserve,” usually had less equipment than their active duty counterparts and much of this equipment tended to be older models.

Protracted conflicts - like Afghanistan and Iraq - serve the purpose of identifying what equipment works and what equipment does not, as well as identifying requirements for new equipment. In the later case, the wars in Iraq and Afghanistan have generated requirements for new equipment such as improved body armor, devices to defeat improvised explosive devices (IEDs), and coagulant bandages, to name but a few. Protracted conflicts also dramatically increase equipment operational usage rates, resulting in reduced useful life and increasing repair and replacement requirements.

Equipment Readiness

Equipment readiness is a significant factor in determining if a unit can accomplish its assigned mission. Equipment readiness is a function of how much of

⁵ Donna Miles, “Army to Ensure Reserve Components Fully Manned, Trained, Equipped,” American Forces Press Service, Feb. 2, 2006.

⁶ Statement by General Peter J. Schoemaker, Chief of Staff of the Army, Before the Committee on Armed Services, United States House of Representatives, “The Army’s Reset Strategy and Plan for Funding Reset Requirements,” June 27, 2006.

it is operational and how much equipment a unit has to train with and use on operations.

Operational Readiness. Having the requisite types and quantities of equipment on hand for a conflict is important but perhaps equally important is that the equipment functions as intended over a sustained period of time. This is often referred to as operational readiness (OR) and is measured as a rate usually as a percentage reflecting the item's mission-capable status as a function of time. According to the Army, its in theater OR rate for ground systems in 2005 was above 90% and above 75% for helicopters. However, the readiness for ground systems not in theater was less than 80% and for helicopters less than 60%,⁷ which has caused concern among some members of Congress that "readiness rates for equipment have fallen so low that ... it presents a strategic risk to respond to contingencies we may face beyond our current commitments in Iraq and in Afghanistan."⁸

Equipment Shortages and Unit Readiness.⁹ Recent reports suggest that Army units that are training at home "are so short on equipment and personnel that they are unready if needed urgently for Iraq, Afghanistan or potentially any other crisis that may emerge domestically or abroad" and that the Army has "deployed units to Iraq and Afghanistan officially rated at the lowest levels of readiness."¹⁰ Reportedly, Army and Marine Corps equipment is being used so heavily overseas to bring deployed units up to their authorized equipment levels that little equipment is available for units "back home" to train with prior to their deployment. These reports maintain that Army readiness is "continuing to decline due to equipment shortages, particularly in the Army National Guard which allegedly "bears the greatest burden of equipment shortages in the Army." Despite these equipment shortages, Army officials insist that units deploying to Iraq or Afghanistan receive additional equipment and training once they arrive in theater before they undertake combat missions.

Equipping the Force

There are a number of dimensions to equipping Army and Marine Corps units that are examined in the following sections. Equipping units might appear to be a relatively straight forward exercise, but there are a variety of factors involved.

⁷ "Resetting the Force: The Equipment Challenge," Association of the United States Army (AUSA) Torchbearer National Security Report, Oct. 2005, p. 8.

⁸ Opening Statement by Rep. Ike Skelton during House Armed Services Committee Hearings on Army and Marine Corps Reset Strategies for Ground Equipment and Rotor Craft, Congressional Transcripts, June 27, 2006, p. 2.

⁹ Memorandum for the Readiness Subcommittee, House Armed Services Committee, from Chairman Joel Hefley, Subject: Closed Subcommittee Briefing to Receive an Update on Current Military Readiness, June 26, 2006 and Elaine M. Grossman, "House Memo: Army Unit Readiness for Iraq, Afghanistan is Lagging," *InsideDefense.com*, July 6, 2006.

¹⁰ Information in this section is from Elaine M. Grossman, "House Memo: Army Unit Readiness for Iraq, Afghanistan is Lagging," *InsideDefense.com*, July 6, 2006.

Funding is perhaps the foremost issue, as funding is often limited, requiring the services often to make trade-offs between equipment needed to sustain operations and equipment for reorganization or modernization efforts. Another issue is that even if funds are readily available, the equipment might not be. Army officials maintain that for some systems, it can take up to three years after receiving funding before they can be fielded to units.¹¹

Equipping Units to Their Authorized Levels. Prior to units being deployed on operations, the Army and Marine Corps typically attempt to bring these units up to their authorized levels of both personnel and equipment. In terms of equipping forces, there are a number of options available. Perhaps the first option is to requisition the needed equipment through each service's respective supply chain but this option may not be practical if a unit's equipment needs are significant or if the unit does not have a great deal of time before it deploys. Other options for equipping units include cross-leveling and drawing equipment "in-theater" when a unit deploys. These two options will be discussed in greater detail in following sections.

Equipping Units Above Authorized Levels. Both the Army and Marines are providing their units with additional equipment over and above their peacetime authorized levels, which is placing significant equipment demands on both services.¹² The Army maintains that its brigade combat teams (BCTs) are operating over a much wider geographical area than they were designed for and therefore require additional equipment to facilitate these dispersed operations. In addition, units such as the 10th Mountain Division, 101st Airborne, and 82nd Airborne, the Army's light, largely foot-mobile infantry units, require extensive equipment augmentation — particularly vehicles — in order to operate over the large areas assigned to them.

The Marines suggest that:

The Marine Corps is executing a number of operational missions that are inherently ground equipment intensive. Stability and Support Operations (SASO), Counter-Insurgency (COIN), Civil Military Operations, and Foreign Military Training all require a greater quantity of equipment than our programmed levels for traditional combat operations. In order to adapt to these new mission requirements, we have revised the Equipment Density List, increasing the quantity of equipment issued to Marine Units deploying into the CENTCOM¹³ ... Our forward operating bases are not in close proximity to each other; the large distances between forward operational bases require additional

¹¹ From discussions with the Army's Material Division, G-8 Section of the Army Staff on Oct. 25, 2006.

¹² Information in this section is taken from the Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, and a discussion with the Army's Material Division, G-8 Section of the Army Staff on July 12, 2006.

¹³ U.S. Central Command (CENTCOM) is the Unified Combatant Command responsible for operations in Iraq and Afghanistan as well as other geographical locations within their command jurisdiction.

vehicles, communications capabilities, and crew-served weapons over and above the standard unit Equipment Density List ... The increased ground equipment requirement, when coupled with high utilization rates, results in a Corps-wide degradation of equipment.¹⁴

The following table provides a selective comparison of a Marine Expeditionary Force (MEF) (Forward) — an approximately 18,000 Marine force — pre-war and revised equipment requirements.¹⁵

Table 1: Selected MEF (Forward) Equipment Density Comparison

Equipment	Pre-War Equipment Density List	Revised Equipment Density List
PRC-117 Radio	78	205
7-Ton Medium Tactical Vehicle Replacement (MTVR)	540	1015
Armored HMMWV	311	981
M-2 50-Caliber Machine Gun	534	634

Coping With Equipment Shortfalls

Cross-Leveling. Cross-leveling is the practice of transferring equipment to a unit either from another unit or from some type of equipment pool such as pre-positioned stocks. In the case of a unit-to-unit transfer, the transferred equipment often comes from a similar-type unit, usually in a non-deployable status. Both the Army and Marines have made extensive use of cross-leveling, particularly early on in the Afghan and Iraq conflicts. According to General Michael W. Hagee, Commandant of the Marine Corps, “equipment across the Marine Corps is continuously cross-leveled and redistributed to ensure that units preparing to deploy have sufficient equipment available.”¹⁶

Impact on National Guard and Reserves. Traditionally, Army National Guard and Reserve forces have not been allotted all of their authorized equipment instead receiving a percentage of authorized equipment based on their mobilization sequence in war plans.¹⁷ According to a congressionally-mandated report:¹⁸

¹⁴ Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 5.

¹⁵ Ibid.

¹⁶ Ibid., p. 3.

¹⁷ United States Government Accountability Office (GAO) Report to Congressional (continued...)

Many lower priority Reserve Component units have been resourced over the years at levels below their mobilization requirements for equipment on-hand. This difference in past resourcing levels and current mobilization requirements has resulted in the Army National Guard and Army Reserve cross-leveling equipment from non-deploying units, reducing readiness in donor units. The significant amount of equipment being cross-leveled and the return of many units from deployments without their equipment is making equipment available for training and future mobilization a major challenge.

According to a GAO report on the Army Reserves, the equipment items most transferred from non-mobilized units to mobilizing units from September 2001 to April 2005 included:

Table 2: Equipment Items Most Transferred from Nonmobilized Units to Mobilizing Units from September 2001 to April 2005¹⁹

Equipment Type	Quantity
Individual Equipment (clothing, boots, etc.)	116,107
Unit Equipment (tents, generators, tool kits, etc.) and Communications Equipment (radios, switchboards, etc.)	54,253
Weapons (machine guns grenade launchers, rifles, etc.)	39,675
Nuclear, Biological, and Chemical Items (protective masks, decontamination kits, etc.)	15,003
Other Miscellaneous Items	10,862

Cross-leveling between Army National Guard units has also resulted in significant equipment shortages. In order to fully equip its deploying units, as of July 2005, the Army National Guard had transferred more than 101,000 pieces of equipment from non-deploying units to deploying units.²⁰ As of May 2005, these

¹⁷ (...continued)

Committees, “Reserve Forces: An Integrated Plan is Needed to Address Army Reserve Personnel and Equipment Shortages,” GAO-05-660, July 2005, p. 14.

¹⁸ National Guard and Reserve Equipment Report for Fiscal Year 2006, In Accordance with Title 10, United States Code, Section 10541, prepared by the Office of the Assistant Secretary of Defense for Reserve Affairs, Deputy Assistant Secretary of Defense (Material and Facilities), Feb. 2005, p. 1-1.

¹⁹ United States Government Accountability Office (GAO) Report to Congressional Committees, “Reserve Forces: An Integrated Plan is Needed to Address Army Reserve Personnel and Equipment Shortages,” GAO-05-660, July 2005, p. 15.

²⁰ United States Government Accountability Office (GAO), Report to the Chairman, Committee on Government Reform, and Chairman, Subcommittee on National Security, Emerging Threats and International Relations, House of Representatives, “Reserve Forces: Plans Needed to Improve Army National Guard Equipment Readiness and Better Integrate (continued...) ”

transfers had reportedly exhausted the National Guard's inventory of more than 220 high demand equipment items, including night vision devices, trucks, armored High-Mobility, Multipurpose Wheeled Vehicles (humvees), and radios.²¹ Reportedly, cross-leveling continues to "hamper the ability of non-deployed forces to train for future missions."²²

The impact of cross-leveling and the war in Iraq has also had an impact on the state mission of National Guard units, particularly in terms of disaster relief. In the aftermath of Hurricane Katrina in 2005, instead of being able to draw on equipment stores of the units in the affected region, the National Guard in Louisiana and Mississippi reportedly had to obtain needed equipment from other Guard units throughout the United States.²³ While Guard officials suggested that there had yet to be an incident where equipment needs could not be met, that the search for equipment increasingly "ranges further and further afield."²⁴

Equipment in Theater.²⁵ The Army has kept large quantities of equipment in theater, primarily to conserve strategic transportation assets and reduce costs but also to ensure that units are adequately equipped when deployed. This initiative — called Theater Provided Equipment (TPE) — began in late 2003 when Army units, including Active, National Guard and Reserve, were directed to leave much of their equipment in theater when they redeployed back to the United States. This equipment is then "handed-off" to units deploying to both Operations Enduring Freedom (OEF) in Afghanistan and Operation Iraqi Freedom (OIF). TPE consists of a variety of equipment items including armored vehicles, individual soldier body armor, and equipment used to counter improvised explosive devices. As of November 2005, Army officials estimated that there were approximately 300,000 TPE items in Iraq - including more than 26,000 vehicles.

The Marines have also directed that equipment needed for OEF and OIF be left in theater. As previously noted, because mission requirements require additional equipment beyond a unit's peacetime equipment allowance, the Marines have developed expanded equipment packages in theater for deploying units. Marine officials maintain that they have deployed 35% of its ground equipment and almost 35% of its aviation assets to support ongoing operations.

²⁰ (...continued)

Guard into Army Force Transformation Initiatives," GAO-06-111, Oct. 2005, p. 4.

²¹ Ibid.

²² Ibid.

²³ Kristen Scharnberg, "Ill-Equipped Guard Units Alarm States," *Chicago Tribune*, Mar. 19, 2006.

²⁴ Ibid.

²⁵ Information in this section is taken from United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, p. 6.

In-Theater Replacement of Damaged and Destroyed Equipment. Both Services have also set aside pools of equipment to rapidly replace equipment damaged and destroyed during operations. The Army refers to this pool of equipment as Theater Sustainment Stocks (TSS) and as of January 2006, included as many as 400 different types of vehicles and equipment numbering about 174,000 pieces of equipment including, Abrams tanks, Bradley fighting vehicles, humvees, and other support vehicles. The Marines also have developed a similar pool of equipment known as Forward In-Stores to replace major equipment damaged or destroyed.

Impact of Keeping In-Theater Equipment Stocks.

Army and Marine Corps Rationale for Keeping Equipment In-Theater. GAO suggests that:

To meet ongoing operational requirements, the Army and Marine Corps have developed and implemented initiatives to concentrate equipment in theater. When the Army initially developed its strategy of retaining equipment from redeploying units in theater, it did not envision this to be a long-term mechanism for managing equipment needs but rather a short-term measure to conserve transportation assets, and more importantly, to ensure that units were rapidly equipped. The Marine Corps, like the Army, developed a similar equipment management initiative.²⁶

According to Army officials, a major consideration for implementing this policy was to reduce the costs associated with having to transport unit equipment from both the United States and Europe to Iraq (by strategic air and sea lift) when units rotated into country for their year-plus tours of duty and then transporting it back to the unit's duty stations when the tours were completed.²⁷

Marine officials²⁸ maintain that the purpose for maintaining in-theater equipment stocks to insure adequate equipment availability to meet operational requirements. With almost 30% of the Marine's ground equipment and 20% of its aviation assets in theater, the Marines felt that there was insufficient equipment stocks remaining to establish an equipment rotation plan that would not severely impact training and readiness for other contingency missions. As additional equipment is procured, the Marines plan to establish a more extensive equipment rotation plan.

The Army and Marines have not made public details of purported cost savings generated by the adoption of this policy and an argument can be made that this short-term policy, which has become the defacto long term policy for the Marines and Army, has resulted in maintenance and training issues — the costs of which could equal or exceed the purported strategic lift cost savings.

²⁶ Ibid., p. 6.

²⁷ From a discussion with the Army's Material Division, G-8 Section of the Army Staff on July 12, 2006.

²⁸ From a discussion with the Marine Corps Programs and Resources Office, Oct. 13, 2006.

*Maintenance Issues.*²⁹ Both the Army and Marines have made “risk based decisions” to keep significant amounts of equipment in theater and to forego depot-level maintenance, relying instead on in-theater maintenance. This decision means that in many cases, equipment has not undergone higher level depot maintenance since March 2003 and because some of this equipment is being used at rates from two to nine times the normal peacetime rate, “some equipment may have added as much as 27 years of use in the past three years.” Sustained usage at this rate without extensive depot-level maintenance could result in equipment wearing out sooner than expected thereby requiring replacement. The Army and Marines have undertaken initiatives to develop additional maintenance capacity in theater. The Army has set up a Humvee refurbishment facility in Kuwait and a Stryker maintenance facility in Qatar and the Marines have established an aircraft maintenance depot in theater. In the Army’s case, much of this in-theater maintenance is being done by contractors and some contractor maintenance is falling short of the Army’s expectations.

Equipment Availability for Training and National Guard Domestic Missions. Reports suggest that non-deployed unit’s lack of equipment is having adverse impact on their ability to train as well as to respond to domestic missions. According to GAO:³⁰

When the North Carolina 30th Brigade Combat Team returned from its deployment to Iraq in 2005, it left behind 229 humvees, about 73 percent of its pre-deployment inventory of those vehicles for other units to use. Similarly, according to Guard officials, three Illinois Army National Guard Units were required to leave almost all of their humvees, about 130, in Iraq when they returned from deployment. As a result, the units could not conduct training to maintain the proficiency that they acquired while overseas or train new recruits. In all, the Guard reports that 14 military police companies left over 600 humvees and other armed trucks, which are expected to remain in theater for the duration of operations.

Of particular concern is that National Guard units may not be adequately equipped to deal with their domestic responsibilities such as consequence management in the event of natural disasters or terrorist attacks. Reportedly, the Florida National Guard headed into the most critical months of the 2006 hurricane season short almost \$50 million worth of equipment.³¹ As of mid-June 2006, the Florida Guard reported almost 400 vehicles left overseas including 230 cargo trucks

²⁹ Information in this section is taken from United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006.

³⁰ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, p 17.

³¹ Mark K. Matthews, “War Saps Guard’s Storm-Response Gear,” *Orlando Sentinel*, July 11, 2006.

and 13 ambulances.³² In units elsewhere that might be expected to respond to chemical or biological terrorist incidents, some reportedly have only 14% of their authorized chemical decontamination equipment and virtually none of their chemical agent monitors.³³

Requirement to Replace Reserve and National Guard Equipment Left in Theater. In late 2003, the Army directed National Guard and Reserve units to leave selected items of equipment in theater when redeploying to the United States.³⁴ DOD Policy³⁵ requires that the Army replace equipment transferred to it by reserve components and if that equipment is left in theater, the Army must provide “plans to replace equipment for units returning home to ensure training readiness.”³⁶ According to GAO, as of March 2006, only three Army replacement plans had been endorsed by the Secretary of Defense to replace National Guard equipment, with another 33 plans in various phases of approval.³⁷ It is not known if this equipment will be new or of a older variety or if it will be provided in sufficient time and in sufficient quantities to permit Reserve component units to maintain their readiness and to execute domestic missions if required. Lieutenant General H. Steven Blum, Chief of the National Guard Bureau, has reportedly stated that as of August 1, 2006, more than two thirds of the National Guard’s brigade combat teams were not combat ready due to what the Guard estimates to be almost \$21 billion in equipment shortages, owing in large part to equipment left in Iraq that has not been replaced.³⁸

³² Ibid.

³³ Ibid.

³⁴ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, p 16.

³⁵ Department of Defense Directive 1225.6, Equipping the Reserve Forces, Apr. 7, 2005.

³⁶ Ibid., p. 3.

³⁷ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, p 17.

³⁸ “Army Guard in “Dire Situation,” *CNN.com*, Aug. 1, 2006, and “General: Most Army Guard Units Unprepared,” *MSNBC.com*, Aug. 1, 2006.

Equipment from Prepositioned Stocks.³⁹ Another source for equipping Army and Marine Corps units is equipment from prepositioned stocks either ashore or afloat. Reports maintain that both the Army and Marines have drawn extensively on prepositioned stocks to support operations in Iraq and Afghanistan.⁴⁰ While drawing on these stocks has facilitated operations in Iraq and Afghanistan, by depleting these stocks, DOD has assumed near-term operational risks if another large scale conflict break out. While the remnants of these prepositioned stocks provide a degree of residual capability, there are supposedly some significant inventory and maintenance shortfalls.

To support operations, the Army reportedly used almost all of its prepositioned ship stocks and its stocks ashore in Kuwait and Qatar as well as some stocks in Europe.⁴¹ This included more than 10,000 pieces of rolling stock, 670,000 repair parts, 3,000 containers and thousands of other items of equipment.⁴² According to General Michael W. Hagee, Commandant of the Marine Corps, the Marines drew equipment and supplies from the Marine Corp's two prepositioning programs — the Maritime Prepositioning Force and the Marine Corps Prepositioning Program (Norway) — to support operations in Iraq and Afghanistan.⁴³

Reconstituting Prepositioned Stocks. The Army and Marines are currently reconstituting their prepositioned stocks. The Army is reportedly focusing on

³⁹ Army Prepositioned Stocks (APS) consists of prepositioned unit sets of equipment, operational projects and sustainment stocks. It also includes War Reserve Stocks for Korea and Israel. Prior to Operation Iraqi Freedom (OIF), the core of the program was five brigade sets -- one afloat on ships stationed at Diego Garcia (designated as APS-3) and one set ashore in Europe (APS-2), one set in Korea (APS-4) and two sets in South West Asia (SWA) (APS-5). As of 2004 there were six brigade sets in APS. Five are on land (one in Europe, three in SWA, and one in Korea) and the sixth is afloat at Guam/Saipan. Fourteen APS Operational Projects provide specialized capabilities over and above normal unit authorizations, such as petroleum distribution, Force Provider housing modules and mortuary affairs. These are located across the globe to support regional Combatant Commander requirements. Sustainment stocks support APS unit sets and deploying units in SWA and Korea until re-supply is initiated from the industrial and sustaining base in the Continental United States (CONUS).

⁴⁰ Unless otherwise noted, information in this section is taken from United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, pp. 15-16.

⁴¹ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness, Committee on Armed Services, House of Representatives, Military Prepositioning: Observations on Army and Marine Corps Programs During Operation Iraqi Freedom and Beyond, GAO-04-562T, Mar. 24, 2006, p. 11.

⁴² Ibid.

⁴³ Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 6.

building two brigade-sized equipment sets in Kuwait and battalion sized sets in Qatar and Afghanistan.⁴⁴ Equipment that is being used to form these sets is coming from a combination of equipment left in theater, equipment being transferred from U.S. depots and from units around the world. Much of this equipment is described as needing “substantial repair.”⁴⁵ The Marines report that they plan to reconstitute Maritime Prepositioning Squadron Two — which was downloaded to support Operation Iraqi Freedom — by February 2009 and that the Marine Preposition Program - Norway should be replenished by FY2010.⁴⁶

War-Related Equipment Needs

The wars in Afghanistan and Iraq have generated a variety of additional equipment requirements. These requirements range from developing new equipment, providing commercially-available equipment to service members and units, and modifying existing equipment. The following sections provide an overview of selected equipment requirements resulting from experiences in Iraq and Afghanistan.

Rapid Fielding Initiative (RFI). The Rapid Fielding Initiative (RFI) is an Army effort to modernize soldier’s individual equipment and small unit equipment for active and reserve components, often times using commercial “off the shelf” items. This initiative is the result of soldiers reporting equipment shortages and inadequacies in 2002 in Afghanistan and elsewhere. In many instances, soldiers and their families used personal funds to purchase such items as body armor and scopes for weapons, because these items were not provided by the Army to deployed soldiers.⁴⁷

In response to this requirement, as well as criticism from the press and Congress,⁴⁸ the Army initiated the RFI program which provides soldiers a “kit” which includes:

About 50 items ranging from mission-essential equipment such as improved boots, socks and “wick-away” T-shirts, to key force protection items such as the advanced combat helmet and knee and elbow pads. Also included are key

⁴⁴ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps, GAO-06-604T, Mar. 30, 2006, pp. 15-16.

⁴⁵ Ibid.

⁴⁶ Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 6.

⁴⁷ Association of the United States Army, “The Rapid Fielding Initiative: Equipping Soldiers to Succeed,” Aug. 2004.

⁴⁸ Richard Lardner, “Army Learns Lessons on Equipping Troops,” *Tampa Tribune* Mar. 16, 2004; Thomas E. Ricks, “General Reported Shortages in Iraq,” *Washington Post*, Oct. 18, 2004; Rep. Dennis J. Kucinich et al., Letter to President Bush Urging the Administration to Better Support the Troops, Dec. 2, 2003.

lethality items such as improved ammunition packs, team radios and advanced weapon optics.⁴⁹

The Army maintains that it costs \$19.7 million per brigade combat team (BCT) to equip soldiers with RFI kits.⁵⁰ According to Army officials, since the start of the RFI program in October 2002, the Army has equipped over 520,000 soldiers in 54 BCTs and supporting units.⁵¹ In FY2004, the Army equipped over 184,000 active and reserve soldiers with over three million pieces of equipment and in FY2005, the number of soldiers increased to over 260,000.⁵² The Army plans another 36,000 soldiers with RFI kit in FY2006, with plans to equip the entire operating Army by the end of September 2007.

Body Armor. The current standard body armor for Army and Marine forces is Interceptor Body Armor (IBA). The basic IBA⁵³ is a modular configuration of an outer tactical vest (OTV) that can protect against explosive fragmentation and 9-millimeter bullets and a series of small arms protective insert (SAPI) plates that can be inserted into the OTV to provide additional protection against small arms hits. There are also attachable throat, groin, and collar protectors to provide additional protection. P.L. 109-289, Department of Defense Appropriations Act, 2007, appropriated \$700 million for the Army and \$25 million for the Marines for the procurement of Interceptor Body Armor.⁵⁴

Not Enough Body Armor for All Troops? The Army had insufficient quantities of IBA (both OTV and SAPI plates) to outfit all soldiers serving in Iraq in March 2003.⁵⁵ On April 17, 2003, the Army Strategic Planning Board agreed to a requirement for 278,000 OTVs and 175,000 SAPI sets (meaning that not every soldier who was issued an OTV would receive SAPI plates) and that “no additional funding for acceleration of production of OTV or SAPI,” would be needed and that

⁴⁹ Ibid.

⁵⁰ Army Briefing, “Task Force Soldier,” Army Fellows Mid Course Review, Jan. 29, 2004, p. 3.

⁵¹ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006.

⁵² Ibid.

⁵³ Information on Interceptor Body Armor (IBA) is taken from an information paper provided by the Army’s Program Manager - Soldier Equipment.

⁵⁴ House Conference Report 109-676, Department of Defense Appropriations Act, 2007 (P.L. 109-289) Sept. 25, 2006, pp. 362-363.

⁵⁵ Department of the Army, The Inspector General, “Special Inspection of the Processes Used to Provide Body Armor to U.S. and Coalition Forces in Operation Iraqi Freedom and Operation Enduring Freedom - December 2003 - February 2004,” Apr. 20, 2004; and Michael Moss, “Many Actions Tied to Delay in Armor for Troops in Iraq,” *New York Times*, Mar. 7, 2005.

IBA procurement began to slow down.⁵⁶ In the ensuing weeks, however, Iraqi suicide and sniper attacks directed against support soldiers operating “behind the lines” led the Army to reverse its position⁵⁷ and on May 15, 2003 the Army reversed its decision and ordered that all soldiers operating in the Central Command (CENTCOM) area of responsibility would receive the complete IBA set and ordered that the Army Budget office was “to procure every OTV and SAPI plate available.”⁵⁸ It took the Department of Defense (DOD) 167 days to start getting IBA to soldiers in Iraq⁵⁹ and some deploying soldiers reportedly purchased their own IBA from the manufacturer or had family members purchase body armor for them.⁶⁰ The Army has testified to Congress that “by April 2004, Central Command reported that it had enough body armor for every soldier and DOD civilian deployed in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF in Afghanistan),” and “to date, the Army has fielded over 700,000 sets of body armor worldwide.”⁶¹

The Army and Marines are continuing to upgrade their body armor. One report suggests the Marine forces will begin receiving the new Modular Tactical Vests (MTV) body armor in February 2007.⁶² The MTV body armor incorporates additional protection to the side of the torso, the lower back and kidney area. The report maintains that the Army will not begin receiving its’ MTVs until FY2010 or FY2012, although the Army is examining the possibility of fielding the body armor component of its Future Force Warrior system earlier than FY2010.

The Impact of Improvised Explosive Devices (IEDs) on Equipping the Force. Some maintain that the most significant equipment challenge facing the Army and Marine Corps is protecting soldiers and marines from improvised explosive devices (IEDs) which have been characterized as “the most lethal weapon

⁵⁶ Department of the Army, The Inspector General, “Special Inspection of the Processes Used to Provide Body Armor to U.S. and Coalition Forces in Operation Iraqi Freedom and Operation Enduring Freedom - December 2003 - February 2004,” Apr. 20, 2004, p. 10.

⁵⁷ Michael Moss, “Many Actions Tied to Delay in Armor for Troops in Iraq,” *New York Times*, Mar. 7, 2005.

⁵⁸ Department of the Army The Inspector General “Special Inspection of the Processes Used to Provide Body Armor to U.S. and Coalition Forces in Operation Iraqi Freedom and Operation Enduring Freedom - December 2003 - February 2004,” Apr. 20, 2004, p. 10.

⁵⁹ Michael Moss.

⁶⁰ Richard Lardner, “Army Learns Lessons on Equipping Troops,” *Tampa Tribune* Mar. 16, 2004 and Ryan Lenz, “Unwilling to Wait, Some Buy Body Armor Before Deploying,” *Army Times*, Mar. 26, 2004. Despite opposition from the Department of Defense, Congress legislated that DOD would reimburse members of the armed forces who purchased protective equipment such as body armor (P.L. 108-375, Sec. 333).

⁶¹ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 2.

⁶² Information in this section is taken from Jeff Schogol, “Marines Downrange to Get New Body Armor in ‘07,” *Mideast Stars and Stripes*, Oct. 22, 2006.

of the insurgency.”⁶³ The IED threat, which some suggest was not anticipated by military planners,⁶⁴ has resulted in a number of equipment-related initiatives which are described in the following sections.

Uparmoring Wheeled Vehicles. Tactical wheeled vehicles ranging from the High-Mobility, Multipurpose Wheeled Vehicle (Humvee) to heavy equipment transporters were intended to operate in combat support and service support roles in “rear areas” where the threat of attack in past conflicts was considered minimal. The nature of the insurgencies in Iraq and Afghanistan however, has been termed a “360 degree” conflict by some where there are no “safe rear areas.” These circumstances, as well as the use of pervasive use of Humvees, in particular, to transport combat troops during operations, has subjected these unarmored vehicles to insurgent attacks — IED attacks in particular. P.L. 109-289, Department of Defense Appropriations Act, 2007, appropriated \$1.074 billion for the Army and \$557 million for the Marines for the procurement of uparmored Humvees.⁶⁵

Uparmoring Humvees. Recognizing the vulnerability of unarmored humvees,⁶⁶ DOD and the services initiated efforts to increase the numbers of uparmored Humvees in theater. The first request from the theater for additional uparmored Humvees (235) was received in May 2003 and by August 14, 2004 the Army had approved requirements to increase the level of uparmored Humvees in theater to 18,005.⁶⁷ This uparmoring has been accomplished through a variety of means including uparmoring Humvees in factories, developing uparmor kits for Humvees for installation in theater, and, in some instances, soldiers and marines adding improvised armor.⁶⁸

Efforts to uparmor Humvees and to produce uparmored kits reportedly have met with a number of difficulties, drawing considerable congressional attention.⁶⁹

⁶³ Mark Mazzetti, “Pentagon Sets its Sights on Roadside Bombs,” *Los Angeles Times*, Nov. 3, 2005.

⁶⁴ John Barry, Michael Hastings, and Evan Thomas, “Iraq’s Real WMD,” *Newsweek*, Mar. 27, 2006.

⁶⁵ House Conference Report 109-676, Department of Defense Appropriations Act, 2007 (P.L. 109-289) Sept. 25, 2006, pp.366-367.

⁶⁶ Not all humvees in service in Iraq and Afghanistan were unarmored. There are numerous humvee versions in each service and versions that are classified as armament carriers and those for use in specialized units - such as Military Police (MP) - are armored variants (uparmored).

⁶⁷ Army Staff (DAPR-FDL), “Protection for High Mobility Multi-Purpose Wheeled Vehicles (HMMWV),” Sept. 17, 2004.

⁶⁸ Ryan Lenz and Jason Straiuzo, “Troops Do Their Own Humvee Upgrades,” *Houston Chronicle*, Jan. 14, 2006.

⁶⁹ For a representative view of congressional concerns see John Donnelly, “Battlefield Armor a Hot Issue for the 109th Congress,” *CQ Today*, Oct. 20, 2005; Anne Plummer, “Hunter Wants to Know Why Troop Vehicles Slated for Iraq are Idling in Texas,” *CQ Today*, Oct. 20, 2005; and Eric Rosenberg, “Lawmakers Criticize Shortage of Humvees,”

(continued...)

In August 2003, manufacturers were producing 51 uparmored Humvees per month.⁷⁰ In February 2004, the Army reached an agreement with manufacturers to increase production to 460 vehicles per month by October 2004, although the manufactures indicated that the maximum production could have been increased to 500 vehicles per month. The Army maintained that it did not have the funds available to fund the maximum production rate of 500 vehicles per month and the manufacturer required an assurance of consistent funding at least three months in advance of delivery. Armor kit production in the Army depot system also experienced difficulties. The Army did not reach its maximum production until April 2004 and there was reported unused capacity at the depots, in one instance a contractor operated Army facility reported that it could produce an additional 800 kits per month, but the Army reportedly had issues with the pricing and contract timing.

While some unarmored Humvees remain in Iraq, the Army and Marines have restricted them to operate within the confines of forward operating bases (FOBs) where the chances of being subject to an IED attack or ambush are considered unlikely.⁷¹ One report suggests, however, that this is not the policy in Afghanistan and that unarmored Humvees are used throughout the country despite the recent surge in IED attacks attributed to Taliban insurgents.⁷² The Army reports that CENTCOM now has over 11,000 uparmored humvees in the region, with 4,299 belonging to Marine forces.⁷³

Humvee Replacement. Efforts to develop a replacement for Humvees have been accelerated, due in part to the vehicle's demonstrated vulnerability to IED's.⁷⁴ Prior to the war in Iraq, the Army reportedly had not planned to introduce a successor

⁶⁹ (...continued)

Contra Costa (CA) Times, Dec. 12, 2005.

⁷⁰ Unless otherwise noted, information in this section is taken from United States Government Accountability Office (GAO) Report to Congressional Committees, "Defense Logistics: Actions Needed to Improve the Availability of Critical items During Current and Future Operations," GAO-05-275, Apr. 2005.

⁷¹ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 5, and Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 4.

⁷² Leo Shane III, "Troops in Afghanistan Told to Wait for Armored Vehicles," *Mideast Stars and Stripes*, Aug. 8, 2006.

⁷³ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 5; and Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 4.

⁷⁴ Steven Komarow, "Effort to Replace Humvee Sped Up," *USA Today*, Aug. 24, 2005.

to the Humvee earlier than 2015, but the need to develop a vehicle with better troop protection features and a sturdier suspension to handle the weight of additional armor, has accelerated developmental efforts and a replacement could enter service as early as 2008.⁷⁵ The Army, Marines, and U.S. Special Operations Command (USSOCOM) are said to be working together to develop the Future Tactical Truck System Utility Vehicle (FTTSUV) and the Army has awarded contracts to International Truck and Engine and Lockheed Martin to build demonstrator vehicles that could eventually lead to replacement vehicles for the Army's and Marine's Humvees.⁷⁶

Uparmoring Other Wheeled Vehicles. The Army and Marines have also conducted extensive uparmoring efforts for their respective fleets of medium and heavy wheeled vehicles. Uparmoring efforts for these heavier logistics vehicles also reportedly experienced a number of difficulties. In December 2004, the House Armed Services Committee was reportedly told by DOD that only 10% of the 4,814 medium weight transport trucks were armored and only 15% of the 4,314 heavy transport vehicles were armored.⁷⁷ According to a GAO report,⁷⁸ the Army first identified a requirement for 3,780 truck armor kits for five types of trucks in November 2003 but did not produce all of the kits until February 2005 and did not install all of these kits until May 2005 - 18 months after the initial requirement was identified.⁷⁹ A number of factors contributed to this situation, including the Army missing the opportunity to have a sizeable number of truck armor kits available for Operation Iraqi Freedom by "not fully capitalizing on approved operational requirements established in 1996."⁸⁰ Additional requirements for uparmored trucks have exacerbated these shortages and the effort to uparmor trucks continues with fuel tankers not scheduled to be completed until early 2007.⁸¹

The Army reports that as of January 18, 2006, 12,188 medium and heavy trucks have been equipped with armor kits.⁸² The Marines report that funding to date has enabled them to provide armor protection for 1,110 Medium Tactical Vehicle

⁷⁵ Ibid.

⁷⁶ "US Army Moves on Joint Humvee Replacement," *Jane's Defense Weekly*, Feb. 22, 2006, p. 8.

⁷⁷ Thomas Shanker and Eric Schmitt, "Armor Scarce for Big Trucks Serving in Iraq," *New York Times*, Dec. 10, 2004.

⁷⁸ United States Government Accountability Office (GAO) Report to Congressional Committees, "Defense Logistics: Several Factors Limited the Production and Installation of Army Truck Armor During Current Wartime Operations," GAO-06-160, Mar. 2006.

⁷⁹ Ibid., p. 1.

⁸⁰ Ibid.

⁸¹ Joseph Tanfani, "Report: Military Errors Held Up Armor in Iraq," *Philadelphia Inquirer*, Mar. 24, 2006.

⁸² Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 5.

Replacements (MTVRs) and over 260 Logistics Vehicle Systems trucks and 180 five-ton trucks.⁸³

M1117 Armored Security Vehicle. The M1117 Armored Security Vehicle (ASV) is an armored wheeled vehicle originally designed for Army Military Police units. The first contract for these vehicles was awarded in 1999 and by March 2003, there were 53 of these vehicles in the Army's inventory.⁸⁴ In addition to being well armed, ASVs earned high marks from soldiers in Iraq in terms of protection and survivability - due to not only angled armor which deflected insurgent's rocket-propelled grenades (RPGs) but also because of its V-shaped hull which helps to reduce the blast effects of IEDs and mines.⁸⁵ The Army, recognizing the value of ASVs for patrolling and for protecting road convoys, have funded a total of 1,118 ASVs at \$700,000 per vehicle.⁸⁶ The ASV is produced by a single supplier - Textron - and the company's production lines in New Orleans were severely damaged in last year's Hurricane Katrina. Production has increased from 6 per month in September 2005 to 48 a month in August 2006.⁸⁷ The Iraqi government has reportedly ordered 50 ASVs for its 8th Mechanized Police Brigade.⁸⁸ P.L. 109-289, Department of Defense Appropriations Act, 2007, appropriates \$83 million for the Army for the procurement of M117 ASVs.⁸⁹

Specialized Counter-IED Vehicles. The Army and Marines have acquired commercially-available armored vehicles designed for route clearance and removal of IEDs. Both vehicles are wheeled and incorporate a V-shaped hull design to mitigate blast effects. DOD reportedly has a \$91 million dollar contract with Force Protection, Inc. of Ladson, SC to build these vehicles for the Army and Marine Corps.⁹⁰ According to the vehicle's manufacturer, both vehicles have been deployed

⁸³ Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p.5.

⁸⁴ "M1117 Guardian Armored Security Vehicle (ASV) ASV-150," GlobalSecurity.org, [<http://www.globalsecurity.org/military/systems/ground/asv.htm>], accessed Aug. 8, 2006.

⁸⁵ Jeff Schogol, "More "Mean-Looking" ASVs Planned for Iraq," *Stars and Stripes*, Apr. 14, 2006 and Elliot Blair Smith, "Textron Fought Storm to Deliver for Army," *USA Today*, May 5, 2006.

⁸⁶ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 6 and Elliot Blair Smith, "Textron Fought Storm to Deliver for Army," *USA Today*, May 5, 2006.

⁸⁷ Elliot Blair Smith, "Textron Fought Storm to Deliver for Army," *USA Today*, May 5, 2006.

⁸⁸ "Iraqi Police Brigade Gets New Armored Security Vehicles," *PortalIraq*, Feb. 28, 2005.

⁸⁹ House Conference Report 109-676, Department of Defense Appropriations Act, 2007 (P.L. 109-289) Sept. 25, 2006, p. 366.

⁹⁰ W. Thomas Smith, "Buffalo Roams the Battlefield to Protect Soldiers from Mines," (continued...)

to Iraq and Afghanistan since 2003 and not a single crew fatality has occurred, despite over 1,000 mine detonations and IED attacks.⁹¹

Buffalo.⁹² The Buffalo is a 23 ton, mine-protected vehicle currently used by the Army for route clearance and to examine suspected IEDs and mines. The Buffalo employs a 30 foot robotic arm with a camera controlled from inside the vehicle to examine suspicious objects or areas. This robotic arm allows the vehicle's crew to examine suspected IEDs without having to dismount the vehicle. According to Army officials, as of February 1, 2006, "several hundred" Buffalo vehicles had been deployed to Iraq and Afghanistan and starting in FY2007, the Army plans to stand up three Route Clearance Companies per year, for a total of twelve companies.⁹³

Cougar.⁹⁴ The Cougar is a 12 ton, mine-protected armored patrol vehicle used by the Marines for route clearance, to examine suspected IEDs and mines, and to provide armored protection to mounted patrols. The Cougar can accommodate from 10 to 16 passengers, depending on vehicle configuration. Unlike the Buffalo, the Cougar does not have a robotic arm to use on suspected IEDs.

IED Detectors and Jammers. Army and Marine efforts to develop technological countermeasures currently fall under the Department of Defense's Joint IED Defeat (JIEDD) Organization - a joint service organization established in 2004 with the charter to identify and develop "innovative, cutting-edge technology and training."⁹⁵ The FY2007 National Defense Authorization Act (NDAA) (P.L. 109-364) Title XV Emergency Authorization authorizes \$2.1 billion for the Joint Improvised Explosive Device Defeat Fund.⁹⁶ According to reports, the Army had

⁹⁰ (...continued)

Washington Times, Aug. 29, 2005.

⁹¹ "Force Protection Exceeds June Production Objectives, Fulfills DOD Cougar Contract," Force Protection Inc., July 3, 2006.

⁹² Information in this section is from Erin Robicheaux, "Buffalo Joins Brigade Combat Team Arsenal," *DefendAmerica News (DOD News Service)*, Mar. 24, 2005 and W. Thomas Smith, "Buffalo Roams the Battlefield to Protect Soldiers from Mines," *Washington Times*, Aug. 29, 2005.

⁹³ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 6.

⁹⁴ Information in this section is from William Skelton, "Cougar Roars Through Iraq," *Marine Corps News*, Apr. 8, 2006; Gerry J. Gilmore, "Heavyweight "Cougars" Protect Marines in Iraq," American Forces Press Service, June 19, 2006; "Cougar: Mine Protected Armor Patrol Vehicle," *Defense Update*, Year 2004, Issue 3.

⁹⁵ Statement by Major General Stephen M. Speakes, Major General Jeffrey A. Sorenson, and Brigadier General Stephen D. Mundt, Readiness Subcommittee and Tactical Air and Land Forces Subcommittee, House Armed Services Committee, Army Force Protection and Aviation Safety Programs, Feb. 1, 2006, p. 3.

⁹⁶ Conference Report 109-702, John Warner National Defense Authorization Act for Fiscal (continued...)

fielded more than 4,200 vehicle-mounted IED jammers as of October 2005 and that DOD had ordered the Army to bypass standard acquisition processes to acquire 10,000 hand-held “Scorpion” jammers to counter remote-controlled explosive devices.⁹⁷

Although there is extensive involvement with industry, academia, and other government agencies to identify and develop counter-IED technologies, little is publically know about specific technologies and how many devices has been deployed to Iraq and Afghanistan. This is in part due to DOD concerns that public information on how counter-IED devices work has been used by insurgents to develop countermeasures. One report cites how an article that appeared in a U.S. newspaper about how a particular counter-IED device worked was used by insurgents in Iraq to develop countermeasures and techniques to defeat the counter-IED device.⁹⁸

Coagulant Bandages. DOD reportedly maintains that about 50% of troop fatalities are due to blood loss and that coagulant or blood clot bandages play a significant roll in reducing these deaths.⁹⁹ According to reports, the Army has had significant difficulties getting these bandages to soldiers while these bandages have reportedly been “standard issue” to Marines since 2004.¹⁰⁰ Reports also suggest that soldiers have requested that friends and relatives purchase these bandages for soldiers and their units serving in Iraq. The Army has reportedly admitted that there have been production problems as well as “supply chain” problems — the bandages were in theater but had not been distributed to troops — and as of June 13, 2006 the Army had informed Congress that the “Army has sent over 200,000 blood clotting bandages to theater — reportedly exceeding the requirement for one bandage per soldier.”¹⁰¹

⁹⁶ (...continued)

Year 2007, (P.L. 109-364) Sept. 29, 2006, p. 848.

⁹⁷ Tony Capaccio, “More U.S. Troops Die in Iraq Bombings Even as Armoring Improves,” *Bloomberg.com*, Oct. 13, 2005.

⁹⁸ Jason Sherman, “DOD Wants Lid on IED Leaks,” *InsideDefense.com*, Mar. 15, 2006.

⁹⁹ Congressional Transcripts, House Armed Services Committee, House Armed Services Committee on Tactical Air and Land Forces Holds Hearing on Update on Troop Protective Equipment, June 15, 2006, p 44.

¹⁰⁰ Unless otherwise noted, information in this section is taken from David Goldstein, “Scrounging to Stanch Bleeding,” *Kansas City Star*, June 8, 2006; Martin C. Evans, “Lifesaving Kits in Short Supply,” *Long Island Newsday*, June 8, 2006; and J. Jioni Palmer, “Army Admits a Shortage,” *Long Island Newsday*, June 16, 2006.

¹⁰¹ Congressional Transcripts, House Armed Services Committee, House Armed Services Committee on Tactical Air and Land Forces Holds Hearing on Update on Troop Protective Equipment, June 15, 2006, p. 45.

Reset: Replacing Damaged, Destroyed, and Worn-Out Equipment

Replacing damaged, destroyed, and worn-out equipment arguably constitutes the most significant equipment issue - both in terms of cost and magnitude - facing the Army and Marine Corps. The process of replacing this equipment is generally referred to as “reset” by the Army and the Marines and is further defined as follows:¹⁰²

- Reset is defined as “a series of actions taken to restore unit equipment to a desired level of combat capability after returning from contingency operations”;
- Reset includes the functions of *repairing* equipment and *replacing* equipment that has either been lost in combat or worn to the point of being uneconomically repairable; and
- Reset also includes the function of *recapitalization* which is the rebuilding or systemic upgrading of currently fielded systems to a “zero time/zero miles” status which is intended to extend service life, reduce operations and support costs, and improve reliability and enhance capability - often based on lessons learned in Iraq and Afghanistan.

The Army and Reset. In June 2006, the Chief of Staff of the Army, General Schoomaker testified to Congress.¹⁰³

Since 9-11, we have reset and returned over 1,920 aircraft; 14,160 tracked vehicles; and 110,800 wheeled vehicles, as well as thousands of other items to our operational units. By the end of this year (FY2006) we will have placed approximately 290,000 major items of equipment in reset. Approximately 280,000 major items will remain in theater and will not redeploy to be reset until a drawdown [troop reduction] is implemented.

Army leadership maintains that reset will be a long-term effort, dependent on the intensity and duration of the present conflicts in Iraq and Afghanistan. The Army expects that the current wartime reset program will need to continue for “a minimum of two to three years beyond” the current conflict but it is possible that it could extend for a much longer period depending on the amount of equipment damaged,

¹⁰² Statement by General Peter J. Schoomaker, Chief of Staff of the Army, Before the Committee on Armed Services, United States House of Representatives, “The Army’s Reset Strategy and Plan for Funding Reset Requirements,” June 27, 2006 and “Resetting the Force: The Equipment Challenge,” Association of the United States Army (AUSA) Torchbearer National Security Report, Oct. 2005.

¹⁰³ Statement by General Peter J. Schoomaker, Chief of Staff of the Army, Before the Committee on Armed Services, United States House of Representatives, “The Army’s Reset Strategy and Plan for Funding Reset Requirements,” June 27, 2006, p. 3.

destroyed, or worn out.¹⁰⁴ Of concern to some is that there maybe no discernable end to the conflicts in Iraq and Afghanistan and that significant amounts of equipment will remain in use in theater and not available for reset, thereby further decreasing the useful life of Army equipment.

Funds for Reset.¹⁰⁵ The Army relies on supplemental funding for reset — reportedly based on directives from the Office of Management and Budget and DOD policy — as these costs “are directly tied to damage and wear resulting from contingency operations,” although an argument can be made that some reset costs — particularly recapitalization costs — existed as part of the Army’s base budget requirements prior to 2001. Prior to the current Iraq war, the Army reset costs were approximately \$3 billion per year, funded within the Army’s base budget.¹⁰⁶ The Army estimates its FY2007 reset requirement to be \$17.1 billion, which includes \$4.9 billion deferred from FY2006. If the operations continue at the current rate, the Army predicts that reset requirements beyond FY2007 will be \$12 to \$13 billion a year throughout the duration of the conflict and for two to three years beyond the end of the conflict. The Army’s “two to three years beyond the end of the conflict” estimate for reset may not be a realistic estimate as it reportedly took the Army two years after the 1991 Gulf War to reset the force after a six-month deployment and approximately 100-hour ground war.¹⁰⁷

The Army maintains that it has not received all the reset funds that it has requested from the Secretary of Defense. In FY2006, the Army requested \$13.5 billion for reset in its internal DOD budget plan, but the Administration approved only \$8.6 billion in reset funding for the Army in the FY2006 supplemental. As a result of this shortfall, the Army has included \$4.9 billion in their FY2007 supplemental request as previously noted.¹⁰⁸ The Army received \$17.1 billion in the FY2007 Supplemental for reset requirements.¹⁰⁹

Congressional Concern. Congress has expressed a number of concerns about reset. One concern is that “billions of dollars in equipment costs are not requested in annual defense budgets but are funded through emergency supplemental spending

¹⁰⁴ Ibid.

¹⁰⁵ Unless otherwise stated, information in this section is taken from Statement by General Peter J. Schoomaker, Chief of Staff of the Army, Before the Committee on Armed Services, United States House of Representatives, “The Army’s Reset Strategy and Plan for Funding Reset Requirements,” June 27, 2006.

¹⁰⁶ Congressional transcripts, House Armed Services Committee Hearing on “Army and Marine Corps Reset Strategies for Ground Equipment and Rotor Craft,” June 27, 2006, pp. 37-38.

¹⁰⁷ Ryan Lenz, “Battered Gear Shipped Home,” *ArmyTimes.com*, June 22, 2006.

¹⁰⁸ Ibid.

¹⁰⁹ Conferees Approve FY2007 Defense Spending Bill, House Committee on Appropriations, Sept. 21, 2006.

bills.”¹¹⁰ Members are reportedly concerned that the Army only requested 64% of its funding in the FY2006 budget and the Marines have sought only 44% of their funding over the past five years.¹¹¹ Another concern is that some Members believe that the Army and Marines have not given adequate attention to National Guard and Reserve equipment reset and that the Services have not coordinated with depots and industry on the increased workload that would be generated by reset.¹¹²

Congress has reportedly expressed concern that the Army has not fully revealed the extent of reset costs.¹¹³ In a series of briefings to congressional staff in late July - early August 2006, the Army reportedly revealed that nearly two thirds of Army brigades have low readiness ratings attributed in large measure to a lack of equipment or equipment in less than satisfactory operating condition. Some Members have reportedly voiced concern over the Army’s revelations of equipment funding shortfalls so late in budgeting process. It is possible that the Army’s readiness briefings were an attempt to gain additional budgetary resources from Congress or perhaps an indication that the Army has not successfully managed its equipment resources, and has only recently realized the readiness implications resulting from equipment deficiencies.

The Marines and Reset. In June 2006, the Commandant of the Marines Corps, General Michael W. Hagee, told Congress approximately 35% of all Marines Corps ground equipment and almost 35% of active duty aviation squadrons were deployed overseas.¹¹⁴ The majority of the Marine’s equipment is remaining in theater after forces rotate home and is subject to almost continuous use.¹¹⁵ The Marines reportedly have almost “ a Marine Expeditionary Force (MEF) and a half worth of gear” in Iraq and senior Marine leaders suggest that it may not make “economic sense” to bring back significant amounts of equipment for reconstitution because excessive use under stressful environmental conditions has significantly decreased the useful life of these items.¹¹⁶

According to one report, Marine equipment losses over time from combat and heavy use has been significant.¹¹⁷ As of August 2006, approximately 5,500 major

¹¹⁰ George Cahlink, “Lawmakers Will Outline Worries About Army, Marine Corps Reset,” *Defense Daily*, June 27, 2006.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ Information in this section is from John M. Donnelly, “Senators Steamed Over Army Funding Reports,” *CQ Today*, Aug. 3, 2006.

¹¹⁴ Statement of General Michael W. Hagee, Commandant of the Marine Corps before the House Armed Services Committee Hearing on Army and Marine Corps Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p. 3.

¹¹⁵ Ibid.

¹¹⁶ Geoff Fein, “Reconstituting Equipment From Iraq May Not Make Much Sense,” *Defense Daily*, Aug. 1, 2006.

¹¹⁷ Information in this section is taken from Lawrence J. Korb, Max A. Bergman, and Loren
(continued...)

pieces of Marine Corps equipment have been destroyed or degraded to the extent that they must be either rebuilt or replaced. Another factor contributing to equipment wearing out is deferring depot level maintenance. This “ultimately leads to higher reset and procurement costs to repair or replace equipment than previously estimated.”¹¹⁸

Funds for Rest. The Marines have requested \$11.9 billion from Congress for both operations and reset in FY2007.¹¹⁹ Prior to the Iraq War, the Marines spent from \$1.5 billion to \$2 billion annually to procure ground equipment.¹²⁰ Marine leadership maintains that even if this funding is received for FY2007 that it will take “two to three years” after these FY2007 funds are obligated before the equipment arrives at the units, suggesting that it could take two to three years to improve the equipment-related readiness of Marine units.¹²¹ The Marines received \$5.8 billion in the FY2007 Supplemental for reset requirements.¹²²

Equipping Iraqi and Afghan Forces

One of the Administration’s criteria for reducing the level of U.S. forces in Iraq is to train and equip an Iraqi army capable of providing security and controlling that country’s insurgency, and the U.S. Army is a “bill payer” in terms of providing some of the equipment for the new Iraqi army. The Chief of Staff of the Army testified to Congress on June 27, 2006 that the following equipment items had been provided from the U.S. Army to the Iraqi Army:¹²³

¹¹⁷ (...continued)

B. Thompson, “Marine Corps Equipment After Iraq,” Lexington Institute, Aug. 2006, p. 8.

¹¹⁸ Ibid.

¹¹⁹ From a discussion with the Marine Corps Programs and Resources Office, Oct. 13, 2006.

¹²⁰ From a discussion with the Marine Corps Programs and Resources Office, Oct. 13, 2006.

¹²¹ Congressional Transcripts, House Armed Services Committee Hearing on Army and Marine Corps Reset Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p 8.

¹²² Conferees Approve FY2007 Defense Spending Bill, House Committee on Appropriations, Sept. 21, 2006.

¹²³ Congressional Transcripts, House Armed Services Committee Hearing on Army and Marine Corps Reset Strategies for Ground Equipment and Rotor Craft, June 27, 2006, p 8.

Table 3: Partial List of U.S. Army Equipment Given to the Iraqi Army as of June 2006¹²⁴

Item	Quantity
Tracked Vehicles	251
Wheeled Vehicles	2,600
Small Arms	153,000
Night Vision Devices	16,000
Uniforms	601,000
Body Armor Sets	242,000
Kevlar Helmets	170,000
Engineer Equipment	56
Generators	195
Material Handling Equipment	17

While General Schoomaker did not provide specific details about this equipment provided to the Iraqi Army, he did remark to members that “equipment that we give up, we have to replace,”¹²⁵ which suggests that the Army intends to replace this equipment at some point. It is possible that a substantial amount of the equipment given to the Iraqi Army was from Army National Guard and Reserve units and stocks, which could further complicate the Army’s requirement to replace equipment taken from the Army National Guard and Reserve.

Better Equipment for the Afghan National Army. According to Army Lieutenant General (LTG) Karl Eikenberry, commander of Combined Forces Command Afghanistan (CFC-A), the United States and the North Atlantic Treaty Organization need to begin to equip the Afghan National Army (ANA) with better and more advanced weapons and vehicles.¹²⁶ According to retired U.S. Army General Barry R. McCaffrey who conducted an assessment of the situation in Afghanistan in May 2006:¹²⁷

¹²⁴ Ibid.

¹²⁵ Ibid.

¹²⁶ Ashley Roque, “Eikenberry: Time to Start Equipping Afghan Army With Better Material,” *InsideDefense.com*, July 3, 2006.

¹²⁷ Academic Report to COL. Mike Meese, Department Head of Social Sciences, United States Military Academy from GEN. Batty R. McCaffrey (retired), Subject: Academic Report - Trip to Afghanistan and Pakistan Friday, 19 May through Friday, 26 May, June 3, 2006, pp. 6-7.

The Afghan Army has shoddy small arms. ANA units do not have mortars, few machine guns, no MK19 grenade machine guns, and no artillery. They have almost no fixed wing transport or attack aviation now or planned. They have no body armor or blast glasses. They have no Kevlar helmets. They have no up-armored Humvees or light armor tracked vehicles.

While LTG Eikenberry maintains that both the United States and NATO should take responsibility for equipping the ANA, it is not unreasonable to assume that the United States will play a leading role in equipping the 50,000 to 70,000 soldier force. Given this, the U.S. Army and possibly Marines might be required to provide a variety of equipment to the ANA, along the lines of what has been provided to the Iraqi Army. Specific information on the types and quantities of equipment that might be provided to the ANA is unknown, as well as the potential impact that providing this equipment might have on Army and Marine readiness. One report suggests that the United States will provide an additional \$2 billion dollars worth of equipment to the ANA, although details regarding types and quantities of equipment and a time frame for providing this equipment was not provided.¹²⁸

Army Modularization¹²⁹

The Government Accountability Office suggests that “ the Army’s and Marine Corp’s equipment reset programs will also have to compete with ongoing force structure changes designed to provide more flexibility in deploying forces for ongoing and future operations.”¹³⁰ According to GAO, the equipment costs for modularity will be about \$41 billion.¹³¹ The Army currently plans to acquire the following items to equip its modular forces:

¹²⁸ Associated Press, “U.S. to Give Afghans \$ 2 Billion in Additional Military Equipment,” *Washington Post*, July 5, 2006.

¹²⁹ For additional information on Army Modularization see CRS Report RL32476, *U.S. Army’s Modular Redesign: Issues for Congress*, by Andrew Feickert.

¹³⁰ United States Government Accountability Office (GAO) Testimony Before the Subcommittee on Readiness and Tactical Air and Land Forces, Committee on Armed Services, House of Representatives, *Defense Logistics: Preliminary Observations on Equipment Reset Challenges and Issues for the Army and Marine Corps*, GAO-06-604T, Mar. 30, 2006, p. 14.

¹³¹ *Ibid.*

Table 4: Selected Items for Modular Units¹³²

Trucks and Support Equipment	Quantity
Humvees	9,196
Medium Trucks	3,180
Heavy Trucks	1,148
Trailers for All Classes of Wheeled Vehicles	17,430
Forward Area Refueling Systems	4,630
Medical Systems	1,059
Generators	18,817
Assault Kitchens	646
Armored Vehicles (a)	
M-1 Abrams Tanks	512
M-2/M-3 Bradley Fighting Vehicles	1,260
M-113 Variant Vehicles	1,345
M-88 Recovery Vehicles	170
Communications, Navigation, and Other Equipment	
Global Positioning System Receivers	21,215
Single Channel Ground and Airborne Radio Systems Radios	22,436
Joint Tactical Radio System Cluster 5 Radios	20,250
Future Battle Command Brigade and Below Radio Systems	8,683
Night Vision Goggles	98,053

Note: a. These purchases will be either upgrades to or capitalization of existing equipment.

Not Fully Equipping Heavy Brigade Combat Teams. A report suggests that the Army may not fully equip some of its modular brigade combat teams (BCTs).¹³³ Currently, the Army plans to establish 35 “heavy” brigade combat

¹³² This table is taken from a Congressional Budget Office (CBO) Study, “The Army’s Future Combat Systems Program and Alternatives,” Aug. 2006, Table 3-3, p. 31.

¹³³ Information in this section, unless otherwise noted, is from Jen DiMascio, “Army May Rotate Equipment Among Its Heavy Brigade Combat Teams,” *InsideDefense.com*, Dec. 26, 2005.

teams¹³⁴ (HBCTs) in the Active Army and National Guard, but might only fully equip 33 of these 35 brigade combat teams. The Army reportedly plans to “share” these 33 sets of equipment with the 35 brigade combat teams as part of the Army’s recently-enacted Army Force Generation Model (ARFOGEN) readiness program - a cyclical program which will replace the Army’s former “tiered” readiness program.¹³⁵ While the Army asserts that only partially equipping the HBCTs will provide units with the “best available equipment to train on and then go into combat with,”¹³⁶ it may be argued that by not fully equipping these two HBCTs, that in the event of an unforeseen conflict requiring the commitment of all available combat units, these two HBCTs will not be available for combat operations.

Difficulties in Equipping Brigade Combat Teams.¹³⁷ A GAO report maintains that the Army is not meeting its equipping goals for BCTs and has not completed a strategy on how to equip the rest of the Army. It suggests that the National Guard will “likely face even greater challenges fully equipping 28 planned National Guard modular combat brigades since National Guard units have historically been underequipped and have transferred large quantities of equipment to deploying units.”¹³⁸

GAO reports that several of the active duty brigades that they audited had significant equipment shortages 180 days after the date that units had been formally reorganized into the new modular brigade structure. According to GAO “the Army is having difficulty providing equipment to units undergoing their modular conversion in time for training prior to operational deployment and deploying units often do not receive some of their equipment until after arriving in theater.”¹³⁹ GAO believes that the Army National Guard will face even more significant equipment issues in equipping its 28 planned BCTs than the Active Army. Although the Army has said that it will dedicate \$21 billion to equipping and modernizing the National Guard through 2007, GAO contends that Guard units will start their modular conversions with much older and much less equipment than their Active

¹³⁴ Heavy brigade combat teams (HBCTs) will be equipped with M-1 Abrams tanks and M-2/M-3 Bradley Fighting Vehicles.

¹³⁵ The ARFORGEN model is a cyclic readiness model whereby active and reserve units will be resourced with personnel and equipment as they proceed through a predetermined cycle as they train for eventual deployment. The previous tiered readiness model assigned units “C-ratings” [with C-1 being fully combat ready and C-4 being not combat ready] and manned and equipped these units based on this rating.

¹³⁶ Jen DiMascio, “Army May Rotate Equipment Among Its Heavy Brigade Combat Teams,” *InsideDefense.com*, Dec. 26, 2005.

¹³⁷ Information in this section is taken from United States Government Accountability Office (GAO) Report to Congressional Committees, Force Structure: Army Needs to Provide DOD and Congress More Visibility Regarding Modular Force Capabilities and Implementation Plans, GAO-06-745, Sept. 2006.

¹³⁸ *Ibid.*, p. 4.

¹³⁹ *Ibid.*, p. 11.

counterparts, which could make equipping these units at comparable levels to active units an extremely difficult undertaking.¹⁴⁰

Revising Marine Equipment Needs to Better Address Irregular Warfare. Reports suggest that the Marines are revising their equipment modernization program to better address the challenges of “irregular warfare” such as the challenges faced in Iraq and Afghanistan.¹⁴¹ The Marines plan to reduce the number of Expeditionary Fighting Vehicles (EFV)¹⁴² from 1,013 to 578 - an almost 43% reduction.¹⁴³ Marine officials note, however, that the reductions in the EFV program were driven by several factors, including strategic guidance, affordability, and developmental problems.¹⁴⁴ The Marines plan to use some of the funds “saved” from the EFV reduction to fund the Light Armored Vehicle-Personnel (LAV-P) variant, the Joint Light Tactical Vehicle [proposed joint replacement for the humvee], and the Internally Transported Vehicle (ITV) which the Marines describe as systems that are versatile and optimized for irregular warfare.¹⁴⁵

The Army’s Future Combat System (FCS)¹⁴⁶ The Future Combat System (FCS) is the U.S. Army’s multiyear, multibillion-dollar program at the heart of the Army’s transformation efforts. It is to be the Army’s major research, development, and acquisition program consisting of 18 manned and unmanned systems tied together by an extensive communications and information network. FCS is intended to replace such current systems as the M-1 Abrams tank and the M-2 Bradley infantry fighting vehicle with advanced, networked combat systems. The Army envisions equipping and fielding 15 FCS brigades by 2025.

¹⁴⁰ Ibid., p. 11.

¹⁴¹ Jason Sherman, “Marines Cut, Kill Programs to Improve Irregular Warfare Capabilities,” *Inside the Pentagon*, Aug. 24, 2006.

¹⁴² “The Expeditionary Fighting Vehicle (EFV) is a keystone for both the Marine Corps Expeditionary Maneuver Warfare (EMW) and Ship-to-Objective Maneuver (STOM) warfighting concepts. It represents the Marine Corps primary means of tactical mobility for the Marine Rifle Squad during the conduct of amphibious operations and subsequent ground combat operations ashore. The EFV is an armored amphibious vehicle capable of seamlessly transporting Marines from Naval ships located beyond the visual horizon to inland objectives. While providing the speed and maneuvering capabilities to operate with the main battle tank on land, current obstacles to the landing force such as oceans, lakes and rivers, can be used by the EFV as high speed avenues of approach and maneuver.” [<http://www.efv.usmc.mil/>]

¹⁴³ Jason Sherman, “Marines Cut, Kill Programs to Improve Irregular Warfare Capabilities,” *Inside the Pentagon*, Aug. 24, 2006 and United States Marine Corps Program Objective Memorandum 08 (POM08) Executive Summary, p. 6.

¹⁴⁴ From a discussion with the Marine Corps Programs and Resources Office, Oct. 13, 2006 and Christopher J. Castelli, “Poor Reliability Puts Expeditionary Fighting Vehicle in Jeopardy,” *Inside the Navy*, Oct. 2, 2006.

¹⁴⁵ United States Marine Corps Program Objective Memorandum 08 (POM08) Executive Summary, p. 6.

¹⁴⁶ For additional information on FCS see CRS Report RL32888, *The Army’s Future Combat System (FCS): Background and Issues for Congress*, May 5, 2006.

According to current plans, the Army plans to field 500 FCS vehicles per year starting in FY2018. The proposed FCS brigade combat team (FCS BCT) will have 500 fewer soldiers than the current modular heavy brigade combat team (HBCT) and fewer vehicles as depicted in the following table:

Table 5: Vehicle Comparison: Modular Heavy BCT vs. FCS BCT¹⁴⁷

Vehicle Type	Modular Heavy BCT ^a	FCS BCT ^a
Tracked	370	320
Trucks	880	550
Towed	410	180
Other	20	180 ^b
Total Vehicles	1,680	1,230

Notes: a. Numbers rounded to the nearest 10.
b. This total includes 150 unmanned ground vehicles and 20 armed reconnaissance helicopters in addition to wheeled vehicles that are not designed for long-distance road travel.

While only 15 BCTs are intended to be fully FCS equipped, the remaining 55 Active and Reserve BCTs (consisting of Infantry BCTs and Stryker BCTs) will also be provided with a variety of systems developed under the FCS program and support units may also receive selected items of equipment developed for FCS. With many units besides heavy brigade combat teams receiving FCS equipment, the Army's total FCS equipment requirements could prove to be substantial.

Another consideration in equipping the Army's FCS force is the cost of the manned ground vehicles (MGVs) that are intended to replace legacy systems such as the M-1 Abrams tank and the M-2 Bradley infantry fighting vehicle. FCS program officials currently estimate the cost per FCS manned ground vehicle at between \$6.7 million to \$10 million apiece — depending on the vehicle variant.¹⁴⁸ While the Army maintains that these per vehicle costs are comparable to the costs of current fully-equipped combat systems, GAO notes that from May 2003 to September 2005, projected FCS procurement costs increased over 50%.¹⁴⁹ If procurement costs continue to grow, it is possible that the per unit procurement costs for FCS MGVs could be significantly higher than the current \$6.7 to \$10 million estimate by the time that the FCS production decision is made in FY2012.

¹⁴⁷ Information from this table is taken from a Congressional Budget Office (CBO) Study, "The Army's Future Combat Systems Program and Alternatives," Aug. 2006, Table 3-3, p35.

¹⁴⁸ From discussion with the Army's G-8 Office, Sept. 15, 2006.

¹⁴⁹ United States Government Accountability Office (GAO) Report to Congressional Committees, Defense Acquisitions: Assessments of Selected Major Weapon Programs, GAO-06-391, Mar. 2006, p. 62.

Potential Issues for Congress

Keeping Large Quantities of Equipment “In-Theater”

Congress might act to review the Army’s and Marine’s current policies which maintain significant quantities of equipment in theater instead of returning a unit’s organic equipment home when the unit departs Iraq and Afghanistan. While soldiers and marines are afforded a break between operational deployments, much of their equipment remains in almost continuous use, resulting in as much as two to nine times the normal wear. Of additional concern is that equipment might not receiving adequate depot-level maintenance and repairs which could further decrease the equipment’s useful life.

From a pure cost perspective, it is possible that cost of repairing and replacing equipment that is almost continual use and not receiving prescribed maintenance might exceed the costs of rotating equipment to and from the theater in conjunction with troop deployments. According to the Chief of Staff of the Army, by rotating one division’s worth of troops (about four BCTs, plus headquarters and support troops) onto another division’s equipment left in theater, the Army avoids almost \$1 billion in transportation costs.¹⁵⁰ Aside from monetary costs, there are other costs that might be worth considering when examining this policy — costs in terms of readiness and ability to train.

Impact on Readiness of Non-Deployed Units. Congress has expressed its concern that a lack of equipment has had a significant impact on readiness. According to the House Armed Service Committee’s Readiness Subcommittee, “Due to operational needs and the positioning of equipment in theater (“stay behind equipment”), equipment shortages exist across the Army and Marine Corps ... the equipment shortages noted above affect not only equipment readiness, but training readiness as well.”¹⁵¹ In a letter to President Bush requesting that the Administration fully fund Army reset requirements, Representative Ike Skelton, the Ranking Member of the House Armed Service Committee wrote:¹⁵²

Today, unclassified Army briefing charts show two-thirds of the brigade combat teams in our operating force are unready. Nearly every non-deployed combat brigade in the active Army is reporting that they are not ready to complete their assigned wartime missions. When I asked General Schoomaker in recent testimony if he was comfortable with the readiness level for non-deployed units located within the continental United States, he simply answered no.

¹⁵⁰ “Ground Truth,” Government Executive Magazine, Sept. 15, 2006, p. 40.

¹⁵¹ Memorandum for the Readiness Subcommittee, House Armed Services Committee, from Chairman Joel Hefley, Subject: Closed Subcommittee Briefing to Receive an Update on Current Military Readiness, June 26, 2006.

¹⁵² Letter from Representative Ike Skelton to President Bush dated July 25, 2006.

Given that these non-deployed units constitute the United State's strategic reserve that could be called on to respond to a military threat elsewhere or a catastrophic terrorist event or natural disaster, it can be argued that the currently policy that keeps significant equipment stocks in the CENTCOM region — Iraq in particular — calls into question the United States' ability to muster properly equipped and ready forces to respond to unforeseen contingencies.

Impact on Training and Domestic Missions. Congress may examine how equipment shortages in non-deployed units may affect the ability to conduct training and respond to domestic missions if required. Although under the Army's new Force Generation (ARFORGEN) cyclical readiness model, units at the lowest readiness level — often times units just returning from Iraq and Afghanistan that are undergoing significant personnel rotations — will supposedly have enough equipment to train with, reports suggest that equipment levels are insufficient in many units to conduct even small unit training.¹⁵³ One aspect of the ARFORGEN cyclical readiness model that Congress might examine are the costs associated with managing, transporting, transferring and maintaining significant amounts of equipment on a continuous basis as units increase their readiness posture.

One report maintains that even Active Army units are experiencing significant equipment shortages which are having a detrimental impact on unit's ability to train.¹⁵⁴ For example, the commander of the Fourth Brigade of the Third Infantry Division, stationed at Ft. Stewart, GA, reportedly acknowledged that "his unit's equipment levels had fallen so low that it now had no tanks or other armored vehicles to use in training and that his soldiers were rated as largely untrained in attack and defense."¹⁵⁵ Many of the brigade's soldiers are new to the unit and some have come directly from basic training and Fourth Brigade may have as few as 11 months to train and prepare for redeployment to Iraq — a significantly shorter time than the two years between rotations for Active units envisioned by the Army Force Generation Model. According to this report "other than the 17 brigades in Iraq and Afghanistan, only two or three combat brigades in the entire Army — perhaps 7,000 to 10,000 troops — are fully trained and sufficiently equipped to respond quickly to crises."¹⁵⁶

¹⁵³ United States Government Accountability Office (GAO), Testimony Before the Commission on National Guard and Reserves, Reserve Forces: Army National Guard and Army Reserve Readiness for 21st Century Challenges, GAO-06-1109T, Sept. 21, 2006; David S. Cloud, "Unit Makes Do As Army Strives to Plug Gaps," *New York Times*, Sept. 25, 2006; Lisa Burgess, "Army Reserve Chief says Two-Thirds of Units Aren't Ready to Deploy," *Mideast Stars and Stripes*, Aug. 5, 2006; and Elaine M. Grossman, "House Memo: Army Unit Readiness for Iraq, Afghanistan is Lagging," *InsideDefense.com*, July 6, 2006.

¹⁵⁴ Information in this section is taken from David S. Cloud, "Unit Makes Do As Army Strives to Plug Gaps," *New York Times*, Sept. 25, 2006.

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

Both Active and Reserve forces have domestic missions in addition combat missions. According to GAO testimony:¹⁵⁷

The Army National Guard reports that its units have less than one-third of their required equipment, and the Army Reserve reports that its units have about half of the modern equipment that they need to deploy. These shortages could also adversely affect reserve units' ability to perform homeland defense missions and provide support to civil authorities in the event of natural disasters or terrorist attacks ... Until recently, it has been assumed that the National Guard could perform its typical state missions such as storm relief and firefighting, with the equipment that it had on hand for federal missions. However, with the heavy use of the Army National Guard in the new security environment, this assumption may not be a sound one, especially in the event of non-traditional threats such as chemical or biological attacks, or pandemic disease.

Given the aforementioned equipment shortages for both active and reserve units, some maintain a detailed examination of equipment shortages for non-deployed Army and Marine units would provide additional insight to Congress. From their perspective, the inability to train due to a lack of equipment not only carries implications for these units when they deploy to Iraq or Afghanistan, but also if they are called upon to conduct combat operations in response to an act of aggression in another theater of operations. Also of importance is the ability to respond to domestic missions, which often times occur with virtually no warning, thereby requiring responding units to have the appropriate equipment on-hand as opposed to having equipment transferred from outside sources.

Recent Congressional Action. Section 345 of P.L. 109-364, the John Warner National Defense Authorization Act for FY2007, requires that the DOD Comptroller General submit a report to the House and Senate Armed Services Committees no later than June 1, 2007 on the readiness of Army and Marine Corps Ground Forces. Amongst other elements of this report, DOD is to:

- Conduct an analysis of the availability for training by units of the Army and Marine Corps in the United States in configurations comparable to equipment being used by units of the Army and Marines Corps, as applicable, in ongoing operations;
- Conduct an analysis of the current and projected requirements for repair or replacement of equipment of the Army and Marine Corps due to ongoing operations and the effect of such required repair or replacement of equipment on the availability of equipment for training; and
- Conduct an assessment of the efforts of the Army and Marine Corps to mitigate the impact of cross-leveling equipment.

¹⁵⁷ United States Government Accountability Office (GAO), Testimony Before the Commission on National Guard and Reserves, Reserve Forces: Army National Guard and Army Reserve Readiness for 21st Century Challenges, GAO-06-1109T, Sept. 21, 2006, pp. I - 11.

Equipping Reserve Forces

Congress might review the Department of Defense's and the Service's plans to equip reserve forces. As previously discussed, reserve forces typically have had less equipment than their active duty counterparts and much of this equipment tended to be older models of equipment in the Active components. Compounding this is the fact that reserve units "have left significant quantities of equipment overseas and the Department of Defense has not yet developed plans to replace it."¹⁵⁸ Recent reports suggesting that additional troops might be required for Iraq and that the National Guard might be called on to fill this requirement¹⁵⁹ could highlight the reserve's equipment shortages as an issue for further examination by Congress.

The Army reportedly has budgeted \$21 billion to improve the Army National Guard's equipment holdings and \$3.8 billion for the Army Reserve over the next 5 years.¹⁶⁰ GAO notes, however that the Army, has not yet provided detailed information about the types and quantities of equipment to be purchased, and it has been suggested that in addition to details on types of quantities of equipment to be procured, that the Army should also provide an assessment of how readiness will be impacted by these procurements. While almost \$25 billion will likely purchase significant quantities of equipment, when this equipment is distributed amongst numerous National Guard and Reserve units, it may, in fact, do little to improve the overall equipment situation for individual units that might be called upon to deploy to Iraq or Afghanistan. This could result in extensive cross leveling of equipment as in the past. GAO maintains that despite the Army's pledge to fund National Guard and Reserve equipment shortages "the need to equip units deploying overseas [and] is likely to continue to take priority over nondeployed units for equipment funds, reserve units are likely to have shortfalls of some key equipment items well into the future."¹⁶¹

Recent Congressional Actions. Section 349 of P.L. 109-364, the John Warner National Defense Authorization Act for FY2007, requires that the Defense Department to report to Congress every 90 days when equipment is withdrawn or diverted from any reserve component unit to another reserve component unit that has been ordered to active duty. Included in this report will be plans to repair, recapitalize, or replace equipment that has been withdrawn or diverted; in cases where a unit is required to leave its equipment in theater when it departs, a plan to provide the departing unit with equipment needed for training to ensure readiness;

¹⁵⁸ Ibid., p. I.

¹⁵⁹ Rowan Scarborough, "Army Considers More Combat Units for Iraq," *Washington Times*, Sept. 25, 2006 and Will Dunham, "Army Shows Signs of Strain in Iraq, Afghan Wars," *WashingtonPost.com*, Sept. 26, 2006.

¹⁶⁰ United States Government Accountability Office (GAO), Testimony Before the Commission on National Guard and Reserves, Reserve Forces: Army National Guard and Army Reserve Readiness for 21st Century Challenges, GAO-06-1109T, Sept. 21, 2006, pp. 3-4.

¹⁶¹ Ibid., p. 4.

and a memorandum between units on how transferred equipment will be accounted for and when the equipment will be returned to the owning unit.

Impact of Equipping Iraqi and Afghan Forces

Congress may decide to review how ongoing and future equipment transfers from the Army to the Iraqi Security Forces will affect readiness. While General Schoomaker provided details to Congress in June 2006 about types and amounts of equipment that had been transferred to Iraq as of that date, it is not widely known if the total equipment requirements have been established by the Administration for equipment transfers to Iraqi security forces. It is also not known if the Marines will be required to provide equipment to Iraqi forces and, if so, what will be the impact on Marine readiness? Congress might also examine Department of Defense plans to replace this equipment and how the Administration intends to fund replacement equipment for the Army and Marines. In a similar manner, Congress might also consider the implications of potential equipment transfers to the Afghan National Army.

Can the Army Fully Equip Modular Units?

Given the concerns over the Army's equipment posture, Congress might choose to examine whether or not the Army can fully equip its modular units given proposed funding. In a report, GAO asserts that:¹⁶²

While the Army is well underway in creating active component modular combat brigades, it is not meeting the equipping goals for these brigades and has not yet completed its equipping strategy which raises considerable uncertainty about the levels to which the modular brigades will be equipped both in the near and longer term and the ultimate cost. Moreover, the Army will likely face even greater challenges fully equipping 28 planned national Guard combat brigades since National Guard units have been historically underequipped and have transferred large quantities of equipment to deploying units.

These shortages include equipment described as necessary for the modular brigades to be as lethal as the previous division-based brigades that they are replacing - including battle command systems, advanced digital communications systems, and advanced sensors needed for intelligence-gathering, reconnaissance, and target-acquisition.¹⁶³ GAO reports that these equipment shortages are due to a number of reasons but primarily because the Army's modular conversion schedule is outpacing funding as well as planned acquisitions.¹⁶⁴

¹⁶² United States Government Accountability Office (GAO) Report to Congressional Committees, Force Structure: Army Needs to Provide DOD and Congress More Visibility Regarding Modular Force Capabilities and Implementation Plans, GAO-06-745, Sept. 2006, p. 4.

¹⁶³ Ibid., p. 13.

¹⁶⁴ Ibid.

Another issue of concern are reports that the Army may not equip two of its heavy brigade combat teams.¹⁶⁵ While the Army contends that under a cyclical readiness model, it is not necessary for these two brigades to have equipment, others see this proposal as indicative of the Army's difficulty in equipping its units. Congress might explore the Army's proposed modular equipping strategy in detail with the Army and DOD. If equipment shortages prove to be insurmountable and the only choice is to field under-equipped and less-capable modular brigade combat teams and support brigades, significant force structure changes which incorporate the Army's equipment on hand and equipment that will be fielded in the near term, might be warranted.

¹⁶⁵ Jen DiMascio, "Army May Rotate Equipment Among Its Heavy Brigade Combat Teams," *InsideDefense.com*, Dec. 26, 2005.