Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues for Congress

Andrew Feickert
Specialist in Military Ground Forces

August 3, 2009

Congressional Research Service
7-5700
www.crs.gov
RS22707

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

In late 2007, the Department of Defense (DOD) launched a major procurement initiative to replace most uparmored High Mobility, Multi-Wheeled Vehicles (HMMWVs) in Iraq with Mine-Resistant, Ambush-Protected (MRAP) vehicles by FY2009. MRAPs have been described as providing significantly more protection against Improvised Explosive Devices (IEDs) than uparmored HMMWVs. DOD's decision to acquire a new, smaller MRAP variant, the M-ATV, for use in Afghanistan; the disposition of MRAPs no longer needed in Iraq; and MRAP mechanical, logistical, and readiness concerns could be potential policy issues for congressional consideration. This report will be updated.

Contents

Contacts

Background

MRAPs are a family of vehicles produced by a variety of domestic and international companies that generally incorporate a "V"-shaped hull and armor plating designed to provide protection against mines and improvised explosive devices (IEDs). DOD originally intended to procure three types of MRAPs.[1] These included Category I vehicles, capable of carrying up to 7 personnel and intended for urban operations; Category II vehicles, capable of carrying up to 11 personnel and intended for a variety of missions such as supporting security, convoy escort, troop or cargo transport, medical, explosive ordnance disposal, or combat engineer operations; and Category III vehicles, intended to be used primarily to clear mines and IEDs, which are capable of carrying up to 13 personnel. The Army and Marines first employed MRAPs in limited numbers in Iraq and Afghanistan in 2003, primarily for route clearance and explosive ordnance disposal (EOD) operations. These route clearance MRAPs quickly gained a reputation for providing superior protection for their crews, and some suggested that MRAPs might be a better alternative for transporting troops in combat than uparmored HMMWVs.

DOD's MRAP Requirement[2]

In 2008, DOD approved the following MRAP acquisitions quantities by service and for other uses: Army, 12,000; Marine Corps, 2,225; Navy, 544; Air Force, 558; U.S. Special Operations Command (USSOCOM), 378; and ballistic testing, 133, for a total of 15,858 vehicles of all categories.

MRAP Survivability[3]

DOD officials have stated that the casualty rate for MRAPs is 6%, making it "the most survivable vehicle we have in our arsenal by a multitude." By comparison, the M-1 Abrams main battle tank was said to have a casualty rate of 15%, and the uparmored HMMWV, a 22% casualty rate.

MRAPs Deployed to Iraq and Afghanistan[4]

As of July 9, 2009, 3,200 MRAPs had reportedly been shipped to Afghanistan, with more than 15,000 MRAPs having been shipped to both Iraq and Afghanistan. About half of Afghanistan's MRAPs have been shipped by air and the other half by sealift.

[1] U.S. Government Accountability Office (GAO) Report, Subject: Rapid Acquisition of Mine Resistant Ambush Protected Vehicles, July 15, 2008.

[2] Ibid.

[3] Information in this section is taken from DOD Press Transcripts, "DOD News Briefing with Geoff Morrell," May 15, 2008.

[4] Donna Miles, "More Mine-Resistant Vehicles Flow to Afghanistan," *American Forces Press Services*, July 9, 2009.

Disposition of MRAPs in Iraq[5]

As U.S. forces begin drawing down in Iraq, the Army and Marines plan to put the majority of MRAPs into prepositioned stocks at various overseas locations, ship a number back to the United States for training, and place a number into logistics and route clearance units. Out of the Army's eventual 12,000 Iraq-based MRAPs, the Army plans to use only 2,675 in operational units. The Army plans on allocating 702 MRAPs for training in addition to the 50 MRAPs already designated for training drivers. Another 1,400 MRAPs will be incorporated into route clearance units and some MRAPs will likely be given to or sold to Iraqi forces. The rest (possibly as many as 7,000) will be placed in world-wide prepositioned stocks. The Marines plan to keep only about 800 of their 2,225 MRAPs with operating forces, with the rest being sent to prepositioned stocks.

Growing Need for MRAPs in Afghanistan[6]

The Pentagon's Joint Improvised Explosive Device Defeat Organization (JIEDDO) reports that roadside bomb casualties in Afghanistan in March 2009 increased almost fivefold since 2007. In March 2007 there were 163 IED incidents in Afghanistan, including devices that were found and disarmed, that resulted in eight successful attacks that resulted in 16 U.S. and coalition casualties. In March 2009, there were 361 incidents, resulting in 27 effective attacks that killed 19 troops and wounded 56. Pentagon officials note that insurgents are building larger IEDs and are finding better ways to conceal them.

A New MRAP Version for Afghanistan

In the summer of 2008, DOD began to examine the possibility of developing and procuring a lighter-weight, all-terrain capable MRAP variant to address the poor roads and extreme terrain of Afghanistan. This new vehicle—designated the MRAP-All-Terrain Vehicle (M-ATV)—is intended to weigh between 7 to 10 tons (as opposed to the 14 to 24 tons of the current MRAP variants) and have better off-road mobility.[7] In early December 2008, a Request for Proposal (RFP) was issued with DOD officials suggesting that as many as 10,000 M-ATVs could be procured, but a more likely estimate was 2,080 vehicles.[8] This requirement for M-ATVs is in addition to the original 15,858 MRAPs approved by DOD in 2008. The Pentagon planned to award up to five contracts for test vehicles in the spring of 2009 and a final production contract to a single firm in May 2009, although DOD did not rule out awarding a final contract to more than one firm.[9] DOD stated that it wished to make a final award to a single firm to avoid the logistical problems encountered in the MRAP program where MRAPs came from a variety of firms.[10] DOD

[5] Information in this section is taken from Emelie Rutherford, "Some Mine-Resistant Vehicles in Iraq Destined for Prepositioned Stocks, CONUS Training," *Defense Daily*, March 17, 2009 and Marjorie Censer, "Army to Move MRAPs Into Training, Route Clearance, Logistics Units," *InsideDefense.com*, March 23, 2009.

[6] Information in this section is taken from Kris Osborn, "Bomb Attacks Worsen in Afghanistan," *Defense News*, May 4, 2009.

[7] Kris Osborn, "DOD Doubles Potential Buy of Lighter MRAPs," *Defense News*, November 17, 2008.

[8] Emelie Rutherford, "Pentagon Eyeing $1.5 Billion Request to Hill for New All-Terrain MRAP Effort," *Defense Daily*, December 3, 2008.

[9] Ibid.

[10] Rebekah Gordon, "Brogan: Step-Ladder Pricing, Cumulative Volume Pricing in M-ATV Contract," *InsideDefense.com*, February 5, 2009.

also hoped to do a better job of pricing M-ATVs, as the Pentagon Inspector General determined that DOD had likely overpaid $45.7 million on some 2,900 MRAPs because they failed to properly determine if contract prices were "fair and reasonable" for the first nine MRAP contracts awarded.[11] The total cost for the M-ATV program is estimated by some to be approximately $3 billion.[12]

Significant Increase in M-ATV Requirement[13]

The Joint Requirements Oversight Council (JROC) has reportedly agreed to increase the M-ATV program requirement to 5,244 as of June 3, 2009. Under this new requirement, the Army would receive 2,598 M-ATVs; 1,565 would go to the Marines; 643 to U.S. Special Operations Command; 280 to the Air Force; 65 to the Navy; and 93 dedicated to testing. The increase in M-ATVs was attributed to further refinement of the original "Operational Needs Statement" and a request from U.S. Central Command. Some suggest that, based on this new requirement, it might not be practical for DOD to award the M-ATV contract to a single firm. The JROC was also reportedly concerned that manufactures might not be able to meet the new M-ATV demand and that the program might not be logistically supportable.

Marines May Not Want All of the M-ATVs Allocated to Them[14]

Marine Corps leadership has indicated that they are not willing to wait for M-ATVs and have instead taken measures to retro-fit Category I and II MRAPs that they already have with a new suspension system at a fraction of the cost of newer M-ATVs. The Marines are apparently satisfied with the performance of these retro-fitted MRAPs and are considering procuring fewer M-ATVs as a result. The Marines have said that "we're going to get it [retrofitted MRAPs] there faster than waiting for the development of the MRAP series designated for Afghan use [M-ATVs] and we're going to do it at a fraction of the price."[15] Because of the Marines' recent statements regarding their acquisition of M-ATVs, the recent JROC allocation of 1,565 M-ATVs might not accurately represent actual Marine Corps needs.

Status of M-ATV Effort

In January 2009, Navistar, a Force Protection and Michigan-based General Dynamics Land Systems (GDLS) team, Oskkosh, General Dynamics Land Systems- Canada (GDLS-C), and BAE Systems were said to have submitted written bids and armor samples.[16] In late February 2009, prototypes were delivered to Aberdeen Proving Grounds for evaluation with a contract award

[11] Ibid.

[12] Emelie Rutherford, "Pentagon Eyeing $1.5 Billion Request to Hill for New All-Terrain MRAP Effort," *Defense Daily*, December 3, 2008.

[13] Information in this section is from Marjorie Censer, "JROC Dramatically Increases the M-ATV Program Requirement to 5,244 Trucks," *InsideDefense.com*, June 4, 2009.

[14] Emelie Rutherford, "Conway: Marine Corps May Buy Limited Number of M-ATVs," *Defense Daily*, June 3, 2009 and Bettina H. Chavanne, "U.S. Marine Corps Reconsiders JLTV," *Aerospace Daily & Defense Report*, April 30, 2009.

[15] Michael Bruno, "U.S. Marine Commandant Promises Osprey, MRAP Developments," *Aerospace Daily & Defense Report*, June 12, 2009.

[16] Rebekah Gordon.

scheduled for June 2009. On March 30, 2009, Navistar reportedly filed a protest citing an "unspecified technicality in the government's evaluation of its proposal" and GDLS-C announced that they were dropping out of the M-ATV competition.[17] Navistar withdrew its protest in early April after the contract was amended by program officials and the award of a single production contract is still expected in June 2009.[18] On June 30, 2009, the U.S. Army Tank and Automotive Command awarded Oshkosh a $1.1 billion contract for 2,444 M-ATVs, and it is expected that Oshkosh would receive another contract by the end of July to build all 5,244 M-ATVs over the next nine months.[19]

MRAP Funding

Prior Year MRAP Funding[20]

Prior year MRAP funding, including wartime supplementals and reprogramming, in billions:

- FY2006 and prior: $0.173
- FY2007: $5.411
- FY2008: $16.838
- FY2009: $4.393
- TOTAL: $26.815

FY2010 MRAP Budget Request[21]

The Pentagon requested $5.456 billion in its Other Contingency Operations (OCO) FY2010 Budget request for 1,080 M-ATVs. There was no request for MRAP funds in the FY2010 Base Budget.

House Armed Services Committee (HASC) Markup of the FY2010 National Defense Authorization Act[22]

The HASC recommended fully funding the President's Budget Request for MRAPs. The committee also encourages the Secretary of Defense to use funds provided to address critical MRAP pre-deployment training shortfalls and to also fully fund the M-ATV program.

---

[17] Marjorie Censer, "Navistar Files Protest in MRAP ATV Competition; GDLS-C Out," *InsideDefense.com,* April 2, 2009.

[18] Marjorie Censer, "Navistar Withdraws M-ATV Protest After Corrective Action Taken in RFP," *InsideDefense.com,* April 9, 2009.

[19] Emelie Rutherford, "Brogan: Oshkosh Likely to Build All 5,244 M-ATVs Without Help," *Defense daily,* July 2, 2009.

[20] Department of Defense FY2008 Budget Amendment for Global War on Terror (GWOT) Request Budget Justification, Mine Resistant Ambush Protected (MRAP) Vehicles, July 31, 2007 and United States Department of Defense Fiscal Year 2010 Budget Request Summary Justification, May 2009.

[21] United States Department of Defense Fiscal Year 2010 Budget Request Summary Justification, May 2009.

[22] HASC Summary, FY2010 National Defense Authorization Act (H.R. 2647), June 17, 2009.

Senate Armed Services Committee (SASC) Markup of the FY2010 National Defense Authorization Act[23]

The SASC recommended providing $6.7 billion for the MRAP Vehicle Fund, including an increase of $1.2 billion over the President's Budget request for M-ATVs.

House Appropriations Subcommittee on Defense Markup of the FY2010 Defense Appropriations Bill (H.R. 3326)[24]

The House Appropriations Subcommittee on Defense recommended $3.6 billion for MRAP procurement, $1.9 billion below the request because additional funding was provided in the 2009 Supplemental Appropriations Act (H.R. 2346).

Potential Issues for Congress

MRAP Disposition

Recent testimony by Army and Marine Corps leadership suggests that almost 8,000 of the almost 16,000 MRAPs are destined for an inactive status in the prepositioned stocks of those Services. As MRAP fielding began in 2007, many of these vehicles destined for prepositioning are likely less than two years old, and it can be argued that this is an inadequate return on investment. On April 6, 2009, Secretary of Defense Gates announced that he intended to significantly restructure the Army's Future Combat System (FCS) program.[25] As part of his justification to restructure FCS, Secretary Gates was concerned that the FCS program did not include a role for MRAPs and implied that there needed to be a greater role for MRAPs in the Army's vehicle modernization plan. It is not known if current Army and Marine Corps plans to inactivate upwards of 8,000 MRAPs constitutes the role that Secretary of Defense Gates envisions for these vehicles, but it might prove beneficial to clarify both DOD's and the Service's positions on this potential point of contention. With the recent FCS program restructuring, the Army will be required to develop a Vehicle Modernization Plan, and the Army plans to replace the FCS Program with what it calls the Army Brigade Combat Team Modernization Plan. Both plans can be expected to address MRAP and M-ATV allocation to Army forces.

M-ATV Program

DOD leadership has suggested that they have learned a number of lessons from the MRAP program that will play a role in how they structure and execute the M-ATV program.[26] These

[23] SASC Press Release, " Senate Armed Services Committee Completes Markup of National Defense Authorization Bill for Fiscal Year 2010," June 26, 2009.

[24] Press Release, Rep. John P. Murtha, "Murtha Unveils FY10 Defense Appropriations Bill," July 16, 2009.

[25] Information in this section is taken from a transcript of Secretary of Defense Robert M. Gates Budget Press Briefing, Arlington, VA April 6, 2009. For detailed information on the Future Combat System see CRS Report RL32888, *The Army's Future Combat System (FCS): Background and Issues for Congress*, by Andrew Feickert.

[26] Kris Osborn, "MRAP Breakthrough," *Defense News*, October 6, 2008 and "Implementing Lessons from MRAP," *Defense Update*, March 2009.

lessons include contractual, order quantity, and pricing lessons as well as safety lessons—including design features to address frequent MRAP rollovers. Other issues from the original MRAP program include problems with a lack of repair parts in theater and vehicle readiness and availability. As congressional committees examine the M-ATV program, it might prove useful to have M-ATV program management address how the M-ATV program will address these and other lessons learned from the MRAP program and how any associated corrective actions will result in a better, more cost-efficient, safer, and operationally superior product.

The Marines and the M-ATV

The Marines appear to be aggressively pursuing the retrofitting of Category I and II MRAPs with an enhanced suspension system in lieu of a large scale M-ATV acquisition. The Marines claim that this is also a more cost-effective approach (supposedly $160,000 per vehicle[27]) to the operational need for lighter and more maneuverable MRAPs for Afghanistan. The Marines' approach raises a number of questions for possible consideration. What are the alleged cost savings associated with the Marines' retrofitting effort? Given retrofitting, do the Marines require the JROC-mandated 1,565 M-ATVs, or do the Marines actually require fewer vehicles? Have the other Services—particularly the Army—considered the Marine approach to retrofitting Class I and II MRAPs? If the other Services have examined the Marines' approach and rejected it, what was their operational rationale for doing so?

Author Contact Information

Andrew Feickert
Specialist in Military Ground Forces
afeickert@crs.loc.gov, 7-7673

[27] Scott Calvert, "Aberdeen Tests Military's Cougar," *Baltimore Sun*, July 12, 2009.