



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

Andrew Feickert

Specialist in Military Ground Forces

June 7, 2010

Congressional Research Service

7-5700

www.crs.gov

RS22707

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 07 JUN 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues for Congress				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Congressional Research Service, Library of Congress, 101 Independence Ave., SE, Washington, DC, 20540-7500				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 8	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Summary

In late 2007, the Department of Defense (DOD) launched a major procurement initiative to replace most up-armored 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 up-armored HMMWVs. Currently, DOD has approved an acquisition of objective of 25,700 vehicles, of which 8,100 are the newer Military-All-Terrain Vehicle (M-ATV) version designed to meet the challenges of Afghanistan's rugged terrain. DOD officials have indicated that this total may be increased depending upon the operational needs in Afghanistan.

Through FY2010, Congress appropriated \$34.95 billion for all versions of the MRAP. In March 2010, DOD reprogrammed an additional \$3.9 billion from the Overseas Contingency Operations fund to MRAP procurement. Both the House and Senate have now approved an additional \$1.2 billion for MRAP procurement included in the FY2010 Supplemental Appropriations Act (H.R. 4899). The full FY2011 DOD budget request of \$3.4 billion for the MRAP Vehicle Fund has been authorized by the House (H.R. 5136). The Senate Armed Services Committee has recommended approval of DOD's request, though floor action has not yet occurred. The DOD budget request remains under consideration by both House and Senate Appropriations Committees.

Among potential issues for congressional consideration are the disposition of MRAPs among active forces, pre-positioned stocks, and U.S. allies; adequacy of logistical support; rate of vehicle production from a sole source; and contract oversight.

Contents

Background 1

 DOD’s MRAP Requirement 1

 MRAPs Deployment and Disposition 1

 Growing Need for MRAPs in Afghanistan..... 2

A New MRAP Version for Afghanistan 2

 Marines May Not Want All of the M-ATVs Allocated to Them..... 2

 Status of M-ATV Effort..... 3

 MRAP Funding..... 3

Potential Issues for Congress..... 4

 MRAP Disposition..... 4

 M-ATV Program..... 4

 The Marines and the M-ATV..... 4

Contacts

Author Contact Information 5

Background

Mine-Resistant, Ambush-Protected (MRAP) vehicles 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 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 up-armored HMMWV, a 22% casualty rate.²

DOD’s MRAP Requirement³

Ashton Carter, Under Secretary of Defense for Acquisition, Technology, and Logistics, has approved an acquisition objective of 25,700 MRAP vehicles for all services. Of this total, 8,100 will be the new MRAP-All Terrain Vehicle (M-ATV) designed to better handle the rugged terrain of Afghanistan. DOD officials have indicated that this requirement may increase depending upon the operational needs in Afghanistan.

MRAPs Deployment and Disposition⁴

As of April 2010, more than 7,000 MRAPs had been shipped to Afghanistan, with over 1,000 of those being the newer M-ATVs. Approximately 7,500 vehicles still remain in Iraq. DOD intends to reach deployment rate to Afghanistan of 1,000 MRAPs per month this summer.

As U.S. forces began drawing down in Iraq, the Army and Marines had planned to put the majority of the earlier versions of the 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. However, with the increase of U.S. forces deploying to Afghanistan, these plans have been adjusted. Currently, of the more than 16,000 Army MRAPs, almost 6,000 will be assigned to infantry brigade combat teams, 1,700 to heavy brigade combat teams, and

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

² Information in this section is taken from DOD Press Transcripts, “DOD News Briefing with Geoff Morrell,” May 15, 2008.

³ “DOD Spends Nearly \$1.1 Billion on More MRAPs,” *Inside the Army*, February 22, 2010.

⁴ “DOD Ups Monthly MRAP Fielding Rate, Eyes Pakistan Transport Route,” *Inside Defense.Com*, April 19, 2010.

almost 200 to Stryker brigades. Support brigades will be assigned about 1,500 vehicles, and the remainder will be dedicated to training and war reserves.⁵

Growing Need for MRAPs in Afghanistan⁶

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. The JIEDDO has not released more current incident statistics. On June 3, 2010, however, Major General Scaparotti, Commander of ISAF Regional Command East noted that while direct fire incidents had declined, the insurgents were increasingly relying on larger, more sophisticated IEDs.⁷

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)—weighs 12 tons (as opposed to the 14 to 24 tons of the earlier MRAP variants) and has better off-road mobility, while providing adequate armor protection.⁸ Despite early concerns over whether one company could fulfill the M-ATV requirement in a timely manner, and provide the logistical support for the vehicles' maintenance, Oshkosh Defense has experienced no reported difficulties meeting DOD delivery expectations. Furthermore, the Defense Logistics Agency maintains that owing to a design emphasizing "commonality of parts," many of the necessary spare parts and maintenance items are already within the supply system, thereby allowing the vehicles to be repaired in theater.⁹

Marines May Not Want All of the M-ATVs Allocated to Them¹⁰

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]

⁵ "Army Official: MRAPs Will Be Sent to BCTs, Training, War Reserve," *Inside the Army*, February 22, 2010.

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

⁷ DOD press briefing, June 3, 2010.

⁸ "M-ATV: MRAP All-Terrain Vehicle," Oshkosh Defense, August 2009.

⁹ "Agencies Work to Field, Support M-ATVs," American Forces Press Service, October 16, 2009.

¹⁰ 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.

and we're going to do it at a fraction of the price.”¹¹ Because of the Marines' statements regarding their acquisition of M-ATVs, the recent JROC allocation of 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, Oshkosh, General Dynamics Land Systems-Canada (GDLS-C), and BAE Systems were said to have submitted written bids and armor samples. In late February 2009, prototypes were delivered to Aberdeen Proving Grounds for evaluation with a contract award 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.¹² Navistar withdrew its protest in early April after the contract was amended by program officials, and sole-source contracts have since been awarded to Oshkosh Defense. DOD has accepted delivery of over 4,000 M-ATVs and more than 1,000 have arrived in Afghanistan.¹³

MRAP Funding

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

- FY2006 and prior: \$0.173
- FY2007: \$5.411
- FY2008: \$16.838
- FY2009: \$6.243
- FY2010: \$6.281
- TOTAL: \$34.946

Through FY2010, Congress appropriated \$34.95 billion for all versions of the MRAP. In March 2010, DOD reprogrammed an additional \$3.9 billion from the Overseas Contingency Operations fund to MRAP procurement. Both the House and Senate have now approved an additional \$1.2 billion for MRAP procurement included in the FY2010 Supplemental Appropriations Act (H.R. 4899). The full FY2011 DOD budget request of \$3.4 billion for the MRAP Vehicle Fund has been authorized by the House (H.R. 5136). The Senate Armed Services Committee has recommended approval of DOD’s request, though floor action has not yet occurred. The DOD budget request remains under consideration by both House and Senate Appropriations Committees.

¹¹ Michael Bruno, “U.S. Marine Commandant Promises Osprey, MRAP Developments,” *Aerospace Daily & Defense Report*, June 12, 2009.

¹² Marjorie Censer, “Navistar Files Protest in MRAP ATV Competition; GDLS-C Out,” *InsideDefense.com*, April 2, 2009.

¹³ “DOD Spends Nearly \$1.1 Billion on MRAPs,” *Inside the Army*, February 22, 2010.

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.¹⁴ 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.¹⁵ These 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 vehicle¹⁶) 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

¹⁴ 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, *Army Future Combat System (FCS) "Spin-Outs" and Ground Combat Vehicle (GCV): Background and Issues for Congress*, by Andrew Feickert and Nathan Jacob Lucas.

¹⁵ Kris Osborn, "MRAP Breakthrough," *Defense News*, October 6, 2008, and "Implementing Lessons from MRAP," *Defense Update*, March 2009.

¹⁶ Scott Calvert, "Aberdeen Tests Military's Cougar," *Baltimore Sun*, July 12, 2009.

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