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

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Summary

Congress has played a central role in the MRAP program, suggesting to defense and service officials that MRAPs would provide far superior protection for troops than the up-armored High Mobility, Multi-Wheeled Vehicles (HMMWVs). Congressional support for MRAPs, as well as fully funding the program, has been credited with getting these vehicles to Iraq and Afghanistan in a relatively short timeframe, thereby helping to reduce casualties. Congress will likely continue to be interested in the MRAP program to ensure that the appropriate types and numbers are fielded, as well as to monitor the post-conflict disposition of these vehicles, as they represent a significant investment.

In 2007, the Department of Defense (DOD) launched a major procurement initiative to replace most up-armored HMMWVs in Iraq with Mine-Resistant, Ambush-Protected (MRAP) vehicles. MRAPs have been described as providing significantly more protection against Improvised Explosive Devices (IEDs) than up-armored HMMWVs. Currently, DOD has approved an acquisition 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 on operational needs in Afghanistan. DOD reports that as of July 21, 2011, 14,749 MRAPs had been delivered to Afghanistan, including 6,980 M-ATVs. Many MRAPs deployed to Afghanistan are not in use because they have been deemed too heavy for some Afghan roads and do not have sufficient cross-country mobility.

Afghan insurgents are employing larger improvised explosive devices (IEDs), resulting in increased casualties to M-ATV occupants. In response, DOD is installing additional armor to M-ATVs. While this armor is intended to provide additional protection to occupants, it might also result in operational restraints associated with a heavier and possibly less stable vehicle.

Through FY2011, Congress appropriated $38.35 billion for all versions of the MRAP. In FY2012, there was no procurement funding requested for the MRAP program. The FY2012 MRAP Overseas Contingency Operations (OCO) budget request is for $3.195 billion to repair, sustain, and upgrade existing MRAPs. The House and Senate Armed Services Committees recommended fully funding the MRAP budget request, and the House Appropriations Committee has also recommended full funding.

Among potential issues for congressional consideration are the status of older, unused MRAPS in Afghanistan that are reportedly not being used because of their size and weight; possible redundancies with the MRAP, M-ATV, and the Joint Light Tactical Vehicle (JLTV) programs; and the impact of adding additional armor to M-ATVs.

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Background

Mine-Resistant, Ambush-Protected (MRAP) vehicles are a family of vehicles produced by a variety of domestic and international companies. They 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, 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 up-armored 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 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 Requirement[3]

Ashton Carter, Under Secretary of Defense for Acquisition, Technology, and Logistics, has approved an acquisition objective[4] 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. Reports in September 2010 suggested that DOD was actively discussing a new follow-on contract for additional M-ATVs over and above the original 8,100 and that new variants might also be developed.[5]

MRAPs Deployment and Disposition

According to DOD, as of July 21, 2011, 14,749 MRAPs had been delivered to Afghanistan, including 6,980 M-ATVs.[6] Reports suggest that many of the older model MRAPs deployed to Afghanistan are not used, as they are considered too large and bulky for tactical missions.[7]

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

[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] An acquisition objective is a Department of Defense approved total number of vehicles/systems/items of equipment that are to be produced as part of a program.

[5] Tony Bertuca, "M-ATV Follow-On Contract, New Variants Under Discussion," *InsideDefense.com,* September 22, 2010.

[6] Information provided to CRS by DOD on July 28, 2011.

[7] Tony Bertuca, "Officials Look to Future of MRAPs as M-ATVs Are Deployed to Afghanistan," *InsideDefense.com,* June 28, 2010.

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 and Secretary of Defense requirements to make better use of MRAPs, these plans have been adjusted. Currently, of the almost 15,000 Army MRAPs, according to a June 2010 Army briefing, about 5,750 will be assigned to infantry brigade combat teams, 1,700 to heavy brigade combat teams, and about 165 to Stryker brigades.[8] Support units will be assigned about 5,350 vehicles, about 1,000 MRAPs will be used for home station and institutional training, and approximately 1,000 MRAPs will be assigned to war reserve stocks and be used to replace damaged or destroyed MRAPs.[9] The Marines are reportedly still developing their ground vehicle strategy and have previously suggested that MRAPs have deployability limitations under the concept of a sea-based, expeditionary Marine force.[10]

MRAPS Credited with Reducing IED Deaths in Iraq and Afghanistan[11]

In an interview with outgoing Secretary of Defense Robert Gates, it was suggested that MRAPs have proven to be 10 times safer than HMMWVs in protecting soldiers during IED attacks. The Pentagon's Joint Program Office for MRAPs also reportedly estimated that as many as 40,000 lives had been saved—10,000 in Iraq and 30,000 in Afghanistan—by MRAPs, based on estimates derived from numbers of attacks and troops inside of the vehicles. Some defense experts suggest that the Joint Program Office's estimates seem too high. Secretary Gates also noted the morale value of the MRAP to service members in terms of both soldier survival as well as knowing that the U.S. government would spare no expense in protecting them from IEDs.

A New MRAP Version for Afghanistan: The M-ATV

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.[12]

M-ATV Requirement for Additional Armor

While M-ATVs initially enjoyed success in Afghanistan, reports suggest that insurgents have increased the size of IEDs, thereby negating much of the protective value of M-ATVs, resulting in increased U.S. casualties.[13] In response to the enhanced IED threat, two additional layers of Israeli-made armor plates are being installed to the M-ATV's underside and new padding and crew harnesses inside the vehicle, which reportedly will enable the M-ATVs to withstand

[8] Information in this section is taken from an Army Briefing given to CRS, "Operational Adaptability Through Affordable Force Modernization," June 17, 2010.

[9] Ibid.

[10] Kate Brannen, "Mobility vs. Survivability," *Defense News,* June 7, 2010.

[11] Information in this section is taken from Vanden Brook, "USA Today Interview – Gates: MRAP a Lifesaver for Troops," *USA Today,* June 27, 2011.

[12] "M-ATV: MRAP All-Terrain Vehicle," Oshkosh Defense, August 2009.

[13] Yochi J. Dreazen, "Desperate Measures," *National Journal,* July 9, 2011.

explosions twice as large as their current classified capability.[14] DOD reportedly concluded a $245 million dollar contract with Oshkosh—the M-ATV's developer—to acquire 5,100 sets of armor.[15] Under Secretary of Defense for Acquisition, Technology & Logistics Ashton Carter supposedly intends to outfit all of the almost 7,000 M-ATVs in Afghanistan with these armor kits.[16] While additional armor and interior improvements could improve M-ATV survivability up to a point, there are concerns that additional armor might have an adverse impact on vehicle mobility, which was the prime consideration for the development of the M-ATV.

MRAP Funding

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

- FY2006 and prior: $0.173
- FY2007: $5.411
- FY2008: $16.838
- FY2009: $6.243
- FY2010: $6.281
- FY2011: $3.4
- TOTAL: $38.346

Through FY2011, Congress appropriated $38.346 billion for all versions of the MRAP. The full FY2011 DOD budget request of $3.4 billion for the MRAP Vehicle Fund was authorized by the Ike Skelton National Defense Authorization Act for FY2011 (P.L. 111-383). In the President's FY2012 DOD budget request, there was no request for procurement funds for the MRAP program.

FY2012 MRAP Overseas Contingency Operations (OCO) Budget Request[17]

Citing an operational requirement for 27,344 MRAPS to support CENTCOM operations, DOD requested $3.195 for the MRAP vehicle program for FY2012, broken down as follows:

- $2.4 billion for operations and sustainment, repair parts, sustainment, battle damage repair and contractor logistics support and foe leased maintenance facilities in Kuwait;
- $.765 billion for survivability and mobility upgrades; and
- $.03 billion for automotive and ballistic testing.

[14] Ibid.

[15] Ibid.

[16] Ibid.

[17] Office of the Secretary of Defense, Fiscal Year (FY) 2012 Budget Estimates Justification for FY 2012 Mine Resistant Ambush Protected (MRAP) Fund, February 2011.

FY2012 Legislative Activity

FY2012 National Defense Authorization Act (H.R. 1540 and S. 1253)[18]

The House and Senate Armed Services Committees recommended fully funding the FY2012 OCO budget request.

Department of Defense Appropriations Bill, 2012[19]

The House Committee on Appropriations recommended fully funding the FY2012 OCO budget request.

Potential Issues for Congress

Status of Unused MRAPs in Afghanistan

As previously noted, many older MRAPs shipped to Afghanistan are reportedly not being used because their size and weight severely limit their effectiveness.[20] If a large number of MRAPS are, in fact, not being used then a fundamental question is, why were they shipped to Afghanistan in the first place? Were these vehicles shipped to Afghanistan, as some say, for symbolic as opposed to operational reasons and, if so, what is the total cost for these unused vehicles to be shipped and maintained in theater? If these vehicles are not being used, is there a better use for them elsewhere or are they to be left in country after the eventual departure of U.S. forces?

It was reported that Pentagon agreed to loan 300 MRAPs in Afghanistan for one year to 15 allied nations currently fighting in Afghanistan.[21] Approximately 85 MRAPs are already out on loan to Poland, Romania, Georgia, and the Czech Republic. All countries that are loaned MRAPs can request an extension on the loan and the borrowing countries are responsible for the costs associated with maintaining these vehicles. Loaning unused MRAPs to coalition partners could not only help to reduce allied casualties but can also help to recoup some of the associated procurement costs of these vehicles.

Are the M-ATV and JLTV Redundant Programs?

In August 2009 briefings to the House Armed Services Committee Air and Land Forces, and Seapower and Expeditionary Forces Subcommittees, the Government Accountability Office (GAO) noted that "the introduction of MRAP, M-ATV and eventually the JLTV creates a potential risk of unplanned overlap in capabilities; a risk that needs to be managed."[22] Defense

[18] [18]National Defense Authorization Act for FY2012 (H.R. 1540) Report of the Committee on Armed Services, House of Representatives, Report 112-78, May 17, 2011, and National Defense Authorization Act for FY2012 (S. 1253) Report of the Committee on Armed Services, United States Senate, Report 112-26, June 22, 2011.

[19] Department of Defense Appropriations Bill, 2012, Report of the Committee on Appropriations, undated, pp. 205 - 207, http://appropriations.house.gov/UploadedFiles/FY_2012_DEFENSE_FULL_COMMITTEE_REPORT.pdf.

[20] Tony Bertuca, "Officials Look to Future of MRAPs as M-ATVs Are Deployed to Afghanistan," *InsideDefense.com,* June 28, 2010.

[21] Tony Bertuca, "Pentagon Loaning 300 MRAPs to 15 Coalition Partners in Afghanistan," *InsideDefense.com,* December 20, 2010.

[22] GAO Briefing to the House Armed Services Committee Air and Land Forces, and Seapower and Expeditionary Forces Subcommittees, "Status of DOD Tactical Wheeled Vehicle Strategy," August 13, 2009, p. 3.

officials have also been asked if there is a need for the MRAP/M-ATV and JLTV programs, as these programs share as many as 250 requirements.[23] While DOD leadership notes that there are 450 additional requirements that the MRAPs and M-ATVs cannot meet, thereby justifying the JLTV program,[24] some analysts question the need for three distinct tactical wheeled vehicle programs, particularly in light of anticipated defense budget cuts. If the services continue to look for "the next best thing" in terms of tactical wheeled vehicles instead of committing to the M-ATV and JLTV programs, they could run the risk of significant redundancies and not being able to afford recapitalizing and replacing the HMMWV fleet.

Additional Armor for M-ATVs in Afghanistan

The use of larger and more lethal IEDs by Afghan insurgents has necessitated adding additional armor to M-ATVs. While this course of action is intended to provide additional protection for the vehicle's occupants, it might also result in a less maneuverable vehicle that might be too heavy for many Afghan roads (the main reason why many MRAPs deployed to Afghanistan are not in use) and perhaps more prone to roll over accidents. Congress might wish to explore the performance characteristics of these modified M-ATVs in greater detail with DOD to ensure that a proper balance between protection and operational utility is reached. Another consideration is whether unused MRAPs—even if less maneuverable than M-ATVs—might be used on certain Afghan routes that can accommodate their weight. Substituting MRAPs whenever operationally feasible might be a more timely and cost-effective option as opposed to DOD's plans to arbitrarily uparmor approximately 7,000 M-ATVs.

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Disclaimer

[23] Cid Standifer, "Taylor: JLTV Absolutely Needed, Regardless of MRAP and M-ATV," *Inside the Navy*, November 9, 2009.

[24] Ibid.