



## **CRS Report for Congress**

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

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### **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 twice as much protection against Improvised Explosive Devices (IEDs) than uparmored HMMWVs. IEDs, at the height of their use, were responsible for about 70% of U.S. casualties in Iraq.<sup>1</sup> The DOD's accelerated MRAP program, decisions to decrease the number of MRAPs procured, and MRAP's performance in urban and counterinsurgency operations raise a number of potential policy issues for congressional consideration. This report will be updated.

### **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 IEDs. DOD is procuring three types of MRAPs. These include Category I vehicles, weighing about 7 tons and capable of carrying 6 passengers; Category II vehicles, weighing about 19 tons and capable of carrying 10 passengers; and Category III vehicles, intended to be used primarily to clear mines and IEDs, weighing about 22.5 tons and capable of carrying up to 12 passengers. The Army and Marines have employed two versions of MRAPs (the Category III Buffalo and the Category II Cougar, respectively) in limited numbers in Iraq and Afghanistan since 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.

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<sup>1</sup> Tom Vanden Brook, "Troops in Iraq Get Safer Vehicle," *USA Today*, May 10, 2007.

**DOD Accelerates the MRAP Program.** Secretary of Defense Robert Gates directed that “the MRAP program should be considered the highest priority Department of Defense acquisition program.”<sup>2</sup> The Secretary of Defense established the MRAP Task Force to speed production and fielding of MRAPs and has assigned the Marines to manage all MRAP procurement for DOD. The MRAP program was designated a “DX” program, giving it priority for resources.<sup>3</sup>

**The Evolving Requirement.** The Buffalo MRAP was originally intended to be fielded only to engineer units, with the Army planning to stand up three Route Clearance Companies per year starting in FY2007, for a total of 12 companies.<sup>4</sup> Marine Corps leadership reportedly decided in February 2007 to replace all uparmored HMMWVs in Iraq with MRAPs, whereas Army leadership would continue to rely on its uparmored HMMWVs.<sup>5</sup> In March 2007, the MRAP requirement for all services reportedly grew by 15% as the Navy, Air Force, and the Special Operations Command (SOCOM) added requirements for MRAPs that stood at 7,774 DOD-wide as of March 26, 2007.<sup>6</sup> In May 2007, reportedly because of the requests from Army commanders in Iraq, Army leadership reportedly began considering the possibility of replacing all uparmored HMMWVs in Iraq with MRAPs, thereby increasing the Army’s total requirement to approximately 17,700 MRAP vehicles.<sup>7</sup> On June 28, 2007, the Joint Requirements Oversight Council (JROC)<sup>8</sup> reportedly endorsed a requirement to replace every HMMWV in with a MRAP, potentially pushing the MRAP requirement to more than 23,000 vehicles.<sup>9</sup> The JROC capped overall MRAP procurement at 15,374 vehicles in September 2007 but suggested that these numbers could change, based on the assessment of commanders.<sup>10</sup>

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<sup>2</sup> Memorandum from Secretary of Defense Robert Gates, “MRAP Acquisition,” May 2, 2007.

<sup>3</sup> Jason Sherman, “Gates Establishes MRAP Task Force to Speed Up Production, Fielding,” *InsideDefense.com*, June 4, 2007, and Emelie Rutherford, “Gates Approves DX Rating for MRAP,” *InsideDefense.com*, June 4, 2007.

<sup>4</sup> 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, February 1, 2006, p. 6.

<sup>5</sup> David Wood, “Marines to Replace Humvees in Iraq,” *Baltimore Sun*, February 15, 2007.

<sup>6</sup> Jason Sherman, “MRAP Requirement Rises 15 Percent as Navy, Air Force, SOCOM Weigh In,” *InsideDefense.com*, March 26, 2007.

<sup>7</sup> Jason Sherman, “Army Eying the Replacement of all Humvees in Iraq with MRAP Vehicles,” *Inside the Pentagon*, May 3, 2007, and Letter from Acting Secretary of the Army Pete Geren to the Secretary of Defense, MRAP Acquisition, May 13, 2007.

<sup>8</sup> Chartered in 1984 ( 10 U.S.C. Sec 181), the JROC is tasked with examining potential joint military requirements; identifying, evaluating, and selecting candidates for joint developmental and acquisition programs; providing oversight of cross-service requirements and management issues; and resolving service concerns that arise after the initiation of a joint program.

<sup>9</sup> Jason Sherman, “Do the Marines Really Want 246,000 MRAPs? Not Exactly,” *Inside Defense.com*, August 2, 2007.

<sup>10</sup> JenDiMascio, “JROC Boosts MRAP Requirements; Congress Struggles to Arrange Funding,” *Defense Daily*, Volume 235, Issue 56, September 20, 2007.

**Fewer MRAPs Required.** On November 30, 2007, the Marines reduced its MRAP requirement from 3,700 to approximately 2,300 vehicles.<sup>11</sup> The Marines cited six factors in its decision:

- IED attacks were dramatically down over the preceding six months;
- the relatively heavy MRAP cannot operate or pursue the enemy off-road, in confined areas, or across most bridges;
- reduced need to put Marines on high-threat roads through the use of persistent surveillance and airlift of supplies;
- counterinsurgency focus requires Marines dismount and interact closely with the local populace;
- MRAPs associated with surge forces were no longer needed; and
- MRAP sustainment numbers were lower because of fewer than expected combat losses.

The Marines reduction in its MRAP requirement from 3,700 to 2,300 was anticipated to result in a potential cost savings of approximately \$1.7 billion in FY2008 and FY2009.

The Army is also expected to cut a number of MRAPs from its current 10,000-vehicle requirement, but have not yet publically committed to a specific requirement.<sup>12</sup> The Army also cited decreasing casualties and IED attacks over the previous six months, as well as the need to dismount and interact with the populace, as factors in reducing its original MRAP requirement.

**MRAPs Deployed.**<sup>13</sup> According to U.S. defense officials, 2,225 MRAPs were in service in Iraq and Afghanistan as of January 22, 2008, but only 45 of these were in operation in Afghanistan. Reports maintain that the United States will ship an additional 500 MRAPs to Afghanistan in the near future to support the additional 3,200 U.S. troops that will be deployed to the region in the next few months.

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<sup>11</sup> Information in this section is taken from a U.S. Marine Corps Information Paper, "Reduction in the USMC Mrap Requirement" November 30, 2007.

<sup>12</sup> Information in this section is from Tom Vanden Brook, "Army May Cut Armored Vehicles," *USA Today*, December 10, 2007 and Jim Garamone, "Army Looks at Long-Term Need for Mine-Resistant Vehicles," *American Forces Press Service*, December 12, 2007.

<sup>13</sup> Information in this section is taken from Daphne Benoit, "US to Deploy 500 Mine Resistant Vehicles to Afghanistan," *Agence France-Presse*, January 19, 2008 and John K. Kruzal, "Pentagon Officials Remain Confident in MRAPs Despite First Casualty," *American Forces Press Service*, January 22, 2008.

## Recent MRAP Contract Activity

**MRAP Vehicle Orders Surpass 11,900.**<sup>14</sup> On December 18, 2007, DOD reported that it had awarded four manufacturers a contract just under \$2.66 billion for an additional 3,126 MRAPs to be delivered by the end of July 2008. This award, combined with previous contract awards, totals 11,941 MRAPs out of the current 15,374 requirement. The December 18, 2007, contracts include the following:

- Stewart and Stevenson Tactical Vehicle (Sealy, TX), a Division of Armor Holdings that was recently acquired by BAE Land Systems, was awarded a contract to produce 668 Category II MRAPs.
- BAE Land Systems and Armaments (Santa Clara, CA) was awarded a contract for 600 additional Category II MRAPs, bringing its total to more than 1,730 vehicles.
- Force Protection Industries, Inc. (Ladson, SC), was awarded a contract for 178 Category I and 180 Category II MRAPS.
- International Military and Government LLC (Warrenville, IL) received the largest single deliver order for 1,5000 Category I MRAPs.

**MRAP II Contract.**<sup>15</sup> On July 31, 2007, the Marines issued a request for proposal for the MRAP II Enhanced Vehicle Competition. The MRAP II is intended to better address the threat of Explosively-Formed Penetrators (EFPs), a type of stand-off improvised explosive device that employs a shaped charge against the sides of vehicles.<sup>16</sup> In December 2007, MRAP program officials announced that only two companies — BAE Systems and a team led by Ideal Innovations,<sup>17</sup> a consultant based in Alexandria, Virginia — were selected to provide six test vehicles each to be evaluated by DOD.<sup>18</sup> Depending on the results of testing, a production decision on MRAP II vehicles could be made from the end of March to May 2008.<sup>19</sup>

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<sup>14</sup> Information in this section is from a U.S. Department of Defense, Office of the Assistant Secretary of Defense (Public Affairs), News Release: “MRAP Vehicle Order Tops 11,900,” No. 1416-07, December 18, 2007.

<sup>15</sup> Emelie Rutherford and Jason Sherman, “Solicitation Expected to be Released this Week for MRAP II Competition,” *InsideDefense.com*, July 30, 2007, and Jason Sherman, “Pentagon Eyes More than a Dozen New Potential Vendors for MRAP II,” *InsideDefense.com*, August 1, 2007.

<sup>16</sup> Tom Vanden Brook, “MRAPs May Need Extra Armor Face EFPs,” *USA Today*, May 31, 2007 and “Add-On Armor Too Heavy for MRAPs,” *USA Today*, July 17, 2007.

<sup>17</sup> The Ideal Innovations Team consists of Oskosh Truck from Oskosh, WI and Ceradyne from Costa Mesa, CA.

<sup>18</sup> Emelie Rutherford, “Two Companies Pass Muster in Testing for Next-Gen MRAP Vehicles,” *Inside the Navy*, December 24, 2007.

<sup>19</sup> *Ibid.*

**MRAP Allocation.**<sup>20</sup> DOD has reportedly allocated the 3,126 MRAPS ordered as of December 18, 2007. The allocations are as follows:

- Army: 2,736.
- Marine Corps: 121.
- Navy: 181.
- Air Force: 88.

Given these allocation figures and the Marine's reduced requirement of 2,300 MRAPs, this allocation will almost satisfy Marine requirements. This allocation will also satisfy the Navy's total requirement for 544 MRAPs, and the Air Force would have 469 of the 697 MRAPs that it requires. Although SOCOM was not allocated any MRAPs in this recent decision by DOD, it reportedly needs 24 MRAPs to meet its requirement. As previously noted, Army requirements are still being examined by defense officials.

## MRAP Concerns<sup>21</sup>

In addition to the aforementioned Marine Corps observation that the MRAP cannot operate or pursue the enemy off-road, in confined areas, or across most bridges, there are other concerns that have arisen from MRAP use in Iraq. According to reports, DOD's MRAP Acquisition Executive, John Young, stated that in certain terrain types, MRAPs were not proving to be as effective and some units wanted to keep their uparmored HMMWVs in lieu of MRAPs because of their superior speed and mobility. Service chiefs have also continued to express their concerns that MRAPs are too large and too heavy for expeditionary operations and can not be deployed by helicopter or by amphibious ships.

## Recent Congressional Action

PL 11-92, FY2008 Appropriations Continuing Resolution, appropriated \$5.2 billion for MRAP procurement, and PL-110-16, FY2008 Defense Appropriations Act, appropriated an additional \$11.6 billion for MRAP procurement. H.R. 4986, FY2008 Defense Authorizations Act, authorizes \$ 17.6 billion for MRAP procurement and associated MRAP transportation, contractor logistics, and research and development costs.

## Potential Issues for Congress

**How Many MRAPs Does DOD Intend Procure?** The Marines have reduced its MRAP requirement by almost 38% and the Army is also expected to reduce its MRAP requirement. While decreasing MRAP requirements based on the improving tactical situation in Iraq and in anticipation of a reduction in troop levels can be considered

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<sup>20</sup> Jason Sherman, "DOD Refines Composition Allocation of MRAP Fleet," *InsideDefense.com*, January 22, 2008.

<sup>21</sup> Jason Sherman, "At Wide-Ranging Hearing, Reports of MRAPs Hampering Mobility, Speed," *InsideDefense.com*, November 8, 2007 and Kimberly Johnson and Michael Hoffman, "Corps to Slash Number of MRAPs it Will Buy," *Army Times*, November 29, 2007.

prudent management by DOD, at some point DOD will need to establish a firm requirement for the total number of MRAPs to be procured. An additional concern is how decreasing MRAP requirements will affect MRAP II procurement.

**If Fewer MRAPs Are Required, How Will Remaining MRAP Funds Be Used?** According to one report, the Marines' decision to reduce its MRAP requirement by almost 38% will generate a cost savings of almost \$1.7 billion.<sup>22</sup> Another report, anticipating that the Army will also reduce its MRAP requirement, suggests that leftover funds could be used to address readiness shortfalls by repairing or replacing equipment and adding new soldiers.<sup>23</sup> Given the likelihood that MRAP requirements DOD-wide will decrease from current funded levels, Congress and DOD might act to determine what the overall cost savings will be and how to apply these funds within and perhaps outside of DOD.

**What Are DOD's Long-Term Plans for MRAP?** Senior Army officials have stressed that MRAPs are only "an interim strategy" and that the Army was still "dedicated to the future of the Joint Light Tactical Vehicle — the HMMWV's replacement."<sup>24</sup> Some question DOD's long-term plans for 15,000 plus MRAPs in the event of a significant troop reduction in Iraq. Will MRAP production quotas be decreased in the event of large-scale troop reductions? Will MRAPs be permanently integrated into force structures, or will they be placed in a reduced readiness status after Iraq? It is also possible that significant numbers of MRAPs could be transferred to Iraqi security forces. Given questions about the MRAP's future, Congress might require DOD to define its long-term plans for the MRAP fleet.

**How Will MRAP Acquisition Affect Other DOD Programs?** Given MRAP's anticipated level of funding, the MRAP program is DOD's third-largest acquisition program, behind missile defense and the Joint Strike Fighter.<sup>25</sup> There are concerns about how MRAP procurement will affect the Joint Light Tactical Vehicle (JTLV) program. The Army-led joint program, which is expected to launch a 27-month development competition in June 2008, could result in over 50,000 JTLVs being produced for the Services starting as early as 2015.<sup>26</sup> With war-related and equipment repair and replacement costs continuing to grow at a substantial rate, there could be funding conflicts between MRAP and other DOD programs as well.

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<sup>22</sup> Dana Hedgpeth, "Marines Reduce Vehicle Request," *Washington Post*, December 1, 2007.

<sup>23</sup> Richard Lardner, "Fewer MRAPs Could Mean More Readiness Funds," *Army Times*, December 12, 2007.

<sup>24</sup> Fawzia Sheikh, "Industry Unclear About Army's Plans for Joint-Service MRAP Program," *InsideDefense.com*, February 12, 2007.

<sup>25</sup> DOD Transcript, DOD News Briefing with John Young, MRAP Task Force Chairman, July 18, 2007.

<sup>26</sup> Jason Sherman, "Army Eyes Launch of JTLV Program in February, Contract Awards in June," *Inside Defense.com*, January 11, 2008.