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# MRAPs, Irregular Warfare, and Pentagon Reform

By CHRISTOPHER J. LAMB, MATTHEW J. SCHMIDT,  
and BERIT G. FITZSIMMONS



**M**ine resistant ambush protected (MRAP) vehicles offer an excellent case study for investigating the current debate over the Pentagon's emphasis on developing and fielding irregular warfare capabilities. The debate was highlighted by a series of recent articles in *Joint Force Quarterly*,<sup>1</sup> including one by Secretary of Defense Robert Gates, who cited the slow fielding of MRAPs as a prime example of the Pentagon's institutional resistance to investments in irregular warfare capabilities. He personally intervened to ensure more than 10,000 MRAPs were fielded quickly. Yet some analysts now argue MRAPs are not really useful for irregular warfare and are prohibitively expensive.<sup>2</sup> As General Barry McCaffrey, USA (Ret.), asserted, "It is the wrong vehicle, too late, to fit a threat we were actually managing."<sup>3</sup>



The controversial MRAPs raise two questions. First, does the MRAP experience support the contention that the Pentagon is not sufficiently able to field irregular warfare capabilities? Second, what factors best explain the MRAP failure, whether that failure is determined to be their delayed fielding or the fact that they were fielded at all? We conclude that MRAPs are a valid irregular warfare requirement and that the Pentagon should have been better prepared to field them, albeit not on the scale demanded by events in Iraq. We also argue that the proximate cause of the failure to quickly field MRAPs is not the Pentagon's acquisition system but rather the requirements process, reinforced by more fundamental organizational factors. These findings suggest that acquisition reform is the wrong target for advancing Secretary Gates' objective of improving irregular warfare capabilities, and that achieving the objective will require more extensive reforms than many realize.

### IEDs and Armored Vehicles in Iraq

By June 2003, 3 months after the initial coalition intervention in Iraq, improvised explosive devices (IEDs) had emerged as the enemy's weapon of choice. That month, then-U.S. Central Command commander General John Abizaid, USA, declared IEDs his "No. 1 threat." By December the percentage of fatalities caused by IEDs rose to roughly half of all U.S. combat deaths, and from the summer of 2005 until the spring of 2008, they caused 50 to 80 percent of U.S. fatalities (see figure 1). The threat evolved over time, but all major forms of IEDs were apparent early on—by 2004 or 2005 at the latest. Initially, the enemy tossed charges under moving vehicles but soon began using roadside bombs set off remotely by electronic devices. As up-armored Humvees became more prevalent, insurgents buried large bombs in the roads to attack their

soft underbellies. By early 2005, insurgents were using IEDs to conduct both side and under-vehicle attacks against the entire range of U.S. armored vehicles. They also were using a particularly lethal form of IED known as the explosively formed penetrator (EFP), which is able to better penetrate armor and, in doing so, spray elements of the weapons and the vehicle armor into the vehicle's interior. The sophisticated EFPs never amounted to more than 5 to 10 percent of the IEDs employed by

one part of the solution, but there were few options readily available. The Army could only find about 200 up-armored Humvees to deliver to Iraq. Clearly more were needed. Two courses of action were taken. First, the Army decided to procure more up-armored Humvees to replace the thin-skinned versions. The Army worked with manufacturers to increase production from 51 vehicles per month in August 2003 to 400 vehicles per month in September 2004, and later to

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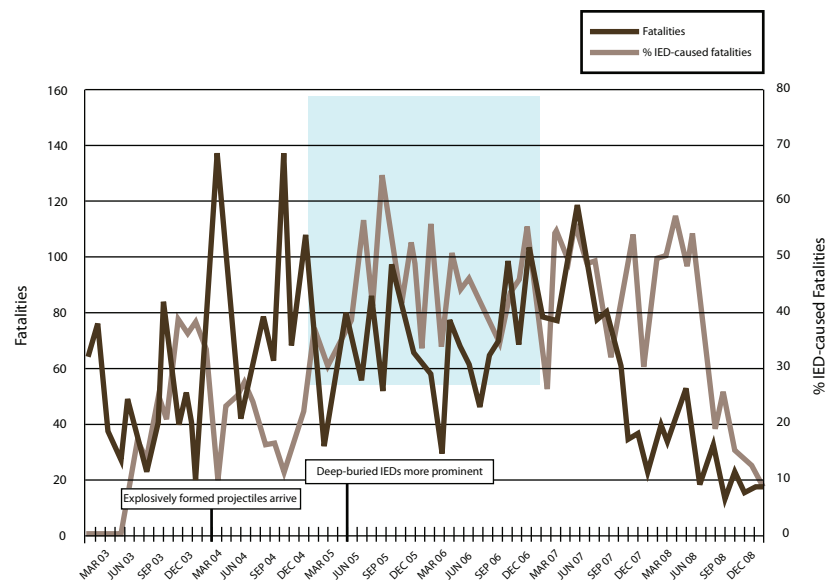
insurgents, but they caused 40 percent of IED casualties. From spring into summer 2005, their use increased from about one per week to roughly one every other day.

**The IED Challenge and Initial Armor Decisions.** Field commanders and Washington also realized early on that IEDs were a complex problem requiring a multifaceted response. Better armored vehicles would be

550 vehicles per month. Second, the Army approved the emergency expedient of adding armor kits to the existing Humvees because they could be fielded more quickly than the up-armored Humvees.

The House Armed Services Committee (HASC) monitored these efforts and, pursuing a mandate from Representative Duncan Hunter (R-CA), took it upon itself to

Figure 1. Percentage of IED-caused Fatalities and Total Fatalities



The box represents the roughly 2-year period before the 2007 "surge" when U.S. operational strategy was to reduce risks to U.S. forces and transfer security responsibilities to Iraq.

Sources: Michael E. O'Hanlon and Jason Campbell, *The Iraq Index* (Washington, DC: The Brookings Institution), available at <[www.brookings.edu/FP/saban/iraq/index.pdf](http://www.brookings.edu/FP/saban/iraq/index.pdf)>; Defense Manpower Data Center, Statistical Information Analysis Division, available at <<http://siadapp.dmdc.osd.mil/personnel/CASUALTY/OIF-Total-by-month.pdf>>; Andrew Feickert, *Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues* (Washington, DC: Congressional Research Service, 2007), available at <<http://fas.org/sgp/crs/weapons/RS22707.pdf>>; and various reports from *Defense News*, *The New York Times*, *DefenseLink*, and *The Washington Post*.

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investigate Pentagon claims that production of the add-on kits could not be accelerated. The HASC staffers shuttled between manufacturers and suppliers, using their private sector experience to clear production bottlenecks and get the kits into the field. With Congress pushing hard, the Pentagon and several Army depots increased production from 35 kits per month in December 2003 to 600 kits per month by July 2004. Consequently, 7,000 kits were delivered 6 months ahead of the Pentagon's original timetable. Still, only 5,330 of the 8,105 up-armored Humvees required by September 2004 were in place.

As the IED problem grew and insufficient numbers of up-armored Humvees were available, innovative U.S. troops began adding improvised armor to their vehicles.

Within a week of the exchange with the Soldier in Kuwait, Secretary Rumsfeld made delivery of up-armored Humvees and add-on armor kits a priority, and Pentagon officials "vowed to eliminate the armored-vehicle shortage in Iraq and Afghanistan within six months."<sup>4</sup> The Army was compliant but not enthusiastic. The Service's Director of Force Development noted both the expense of the program (over \$4 billion) and the Secretary's determination: "This is an enormously expensive program, but very frankly, the communication from the secretary of defense has been real clear."<sup>5</sup>

**The Political Problem.** Pressure to do more to counter IEDs did not begin with the concerned Soldier's question to Secretary Rumsfeld. Representative Hunter and the

incensed that in the President's budget request for fiscal year 2005, the Army had categorized the up-armored Humvee and add-on armor kits as "unfunded" requirements: "At a time when you're in a war fight and you've got these IEDs . . . and we're taking fairly substantial casualties, why would force protection, such as up-armor, ever be an unfunded requirement?"<sup>6</sup>

When it became clear that even the up-armored Humvees offered insufficient protection against IEDs, Senators from across the political spectrum, including Ted Stevens (R-AK) and Joe Biden (D-DE), weighed in on what Missouri Republican Kit Bond decried as an unacceptable "set of bureaucratic delays" in fielding MRAPs. Media and whistleblower exposés, war college studies, congressional investigations, and inspector general reports castigated Pentagon performance. Legislators complained about the inability to "legislate a sense of urgency" and withheld funding until improvements in armor were made. In short, there was sustained political pressure to do something about the IED problem and provide better vehicular armor to the troops.

**Pentagon Organizational Adaptation.** The Pentagon did not anticipate or prepare well for the possibility of postwar disorder. As many studies have concluded, senior civilian leadership expected U.S. military forces to leave Iraq quickly. This proved impossible as the insurgency heated up and produced

*the enemy intended to use improvised explosive devices and distribute the images of their effects to force the United States to leave Iraq*

Scrap metal, plywood, and sandbags were used to increase protection. The problem was highlighted in December 2004 when a Soldier complained about the improvised armor to then-Secretary of Defense Donald Rumsfeld in a town hall meeting in Kuwait. The Secretary's response about "going to war with the Army you have" and his further explanation that the lack of armor was a "problem of physics" implied nothing could be done about the situation, which elicited a firestorm of protest from Members of Congress, the public, and manufacturers who insisted they could increase production to meet the needs of U.S. troops.

HASC were already on the task. However, the incident propelled the armor issue into the public consciousness. In Congress, numerous Representatives and Senators from both parties complained about the Pentagon's inadequate efforts to supply the troops with armor as well as other irregular warfare equipment such as body armor and electronic jammers. Hunter was particularly active. His HASC hearings on military acquisition were excruciating for the Pentagon. In an April 21, 2004, hearing, Hunter related in detail how he and his staff also had built a perfectly useable up-armored Humvee with help from Home Depot. Hunter and his staff were particularly

casualties that contributed to declining American public support for the intervention. As General George Casey, USA, then-commander of Multi-National Force-Iraq, noted in 2004, the enemy intended to use IEDs and distribute the images of their effects to force the United States to leave Iraq. Pentagon leaders knew that countering IEDs was imperative.

In response, a new organization to combat IEDs was created. In September 2003, at the behest of General Abizaid, the Army set up a small unit dedicated to defeating IEDs, which adopted the motto: "Stop the bleeding." The task force concentrated on the portion of the IED problem "left of the boom"—that



Marines put Cougar H 4x4 MRAP through offroad course test

U.S. Marine Corps (Jason W. Fudge)



is, on improving ways to avoid IEDs and attacking the ability of insurgents to make, emplace, and control the IEDs before they went off. The Army's Rapid Equipping Force also put its emphasis on solutions "left of the boom." The following summer, in July 2004, the Army-centric task force was upgraded to an Army-led Joint Integrated Process Team to harness the expertise of all the Services. From September 2004 on, the Secretary of Defense and Deputy Secretary of Defense issued memoranda authorizing expedited procurement of equipment designed to save lives and created the Joint Rapid Acquisition Cell (JRAC) for that purpose. The following year, the Pentagon upgraded its efforts to combat IEDs by creating the Joint IED Task Force. By the time the Joint IED Task Force became the Joint IED Defeat Organization (JIEDDO), it controlled hundreds of personnel and annual budgets of more than \$3 billion.

The Pentagon organizations dedicated to countering IEDs could claim some success. IED effectiveness (measured by the ability to produce coalition casualties) dropped from a high of over 50 percent early in the war to less than 10 percent effectiveness by the time MRAPs began flowing to theater in the fall of 2007. Thus, JIEDDO and other counter-IED efforts such as up-armored Humvees reduced the average effectiveness of an insurgent IED attack, thereby forcing insurgents to stage more attacks to obtain equivalent effects. Unfortunately, the insurgents were able to do so and actually to increase their ability to inflict U.S. fatalities (see figure 2). Clearly, the battle against IEDs was not being won.

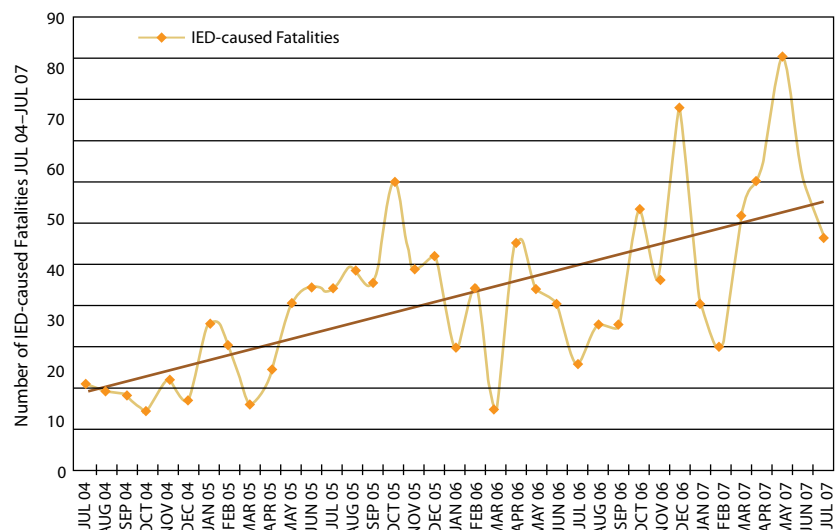
In this context, considering better armored vehicles was an obvious option, but JIEDDO did not push the issue for two reasons. First, the organization focused more on prevention than protection. The predilection for working the IED problem left of the boom was consistent with an offensive mentality (attacking the IED network) and offered the possibility of a more elegant solution if it could be achieved. This orientation was so strong that some JIEDDO members were dismissive of field commanders for wanting to "place a cocoon around the soldier driving down the street in his vehicle" rather than "taking out the IEDs first."<sup>7</sup> Second, JIEDDO did not have responsibility for acquisition of better armored vehicles. Its mandate allowed it to fund development of better armor for MRAPs, but it did not have authority to procure and sustain better armored vehicles, which was the

prerogative of the military Services based on their assessment of requirements.

**MRAP Requirements: The Lost 2 Years.** Field commanders wanted more armor in general and MRAPs in particular. First, a Military Police commander in Iraq issued an urgent request in June 2003 for armored security vehicles (ASVs) to help protect U.S. military convoys and patrols. The ASVs were lighter than the MRAPs that were ultimately fielded but similarly designed for better protection against mines and other ambushes. Also late in the summer of 2003, the Army's 101<sup>st</sup> Airborne Division issued a plea for more vehicle armor and training to evade IEDs. In September, other commanders began to request MRAPs. By November, a draft "urgent universal need statement" for

The slow approval of MRAP requirements did not reflect lack of appreciation for their effectiveness. Early and throughout the war, U.S. experts on military requirements recommended armored cars and MRAPs for Iraqi forces also under attack from IEDs, but those in charge of Pentagon requirements did not think they were a good fit for the U.S. military. An internal Marine Corps report<sup>9</sup> found that the Marine requirements process largely discounted the need for MRAPs. When Marine Corps senior leaders convened on March 29–30, 2005, to consider the need for MRAPs, flag officers heard a strong case for their immediate purchase from a Marine who had long studied their value in irregular warfare. The assistant commandant of the Marine Corps then "directed the Deputy Commandant

Figure 2. Trendline for IED Fatalities Before the Surge and MRAP Deployments



MRAPs from a Marine field commander was circulating in the Pentagon. The final version, sent on February 17, 2005, made the case that the Marines should not continue to absorb casualties from IEDs when commercial off-the-shelf MRAPs are available, and that these avoidable casualties carried the "potential to jeopardize mission success."<sup>8</sup> Despite such requests from the field, it took more than 2 years, political pressure from Congress, and a determined intervention by the Secretary of Defense before the JROC validated a large purchase of MRAPs as a military requirement.

for Combat Development and Integration to review the feasibility of developing or buying a new, mine-resistant tactical vehicle to replace the [Humvee] and to present the results at the next Executive Safety Board meeting."<sup>10</sup> That did not happen. Instead, the decision was made to hold out for a future vehicle that would meet all the requirements for mobility and protection better than either the up-armored Humvee or MRAPs. The Army requirements process was even less favorably inclined toward the vehicle, always moving more slowly than the Marines to approve MRAP requirements and in smaller numbers.

Field commanders persisted, however, and in 2006 finally succeeded in getting the Pentagon requirements process to approve the vehicles. On May 21, 2006, the commanding general, Multi-National Force–West, submitted a request for 185 MRAPs to the Joint Requirements Oversight Council (JROC), and in July he submitted a request for 1,000 more. The eventual approval of the requirement for 1,185 MRAPs cleared the way for a joint acquisition program, which began in November 2006. However, an approved MRAP requirement did not guarantee the program a high priority, as was soon made clear by HASC testimony on March 13, 2007, by Generals Robert Magnus, USMC, and Richard Cody, USA.

General Magnus acknowledged MRAPs are “up to 400 percent more effective than the up-armored Humvees in reducing injuries and deaths” and can “cut casualties by perhaps as much as two-thirds.”<sup>11</sup> Yet just as the Services classified armor kits and up-armored Humvees as “unfunded requirements” in 2004, General Magnus and General Cody explained to the dismayed HASC in the

spring of 2007 that MRAPs were unfunded requirements. When General Cody noted the Army “did not have a valid requirement except for 335 MRAP vehicles when the 2008 Title IV supplemental was being built,” he was interrupted by Representative Gene Taylor (D–MS):

*But we are getting back to that word requirement. And I have pointed out three instances where somebody tried to fight this war on the cheap [with needless casualties] because of body armor, because of Humvees and because of jammers. So the question is: Why do we go through this again? . . . If this vehicle is going to save lives, if Humvees, as we now know, are vulnerable to mines and a hugely disproportionate number of casualties are occurring in Humvees because of mines and we have a way to address that, why don't we address it now?*

Taylor complained that the Army “seems to be dragging their feet.” General Magnus then intervened to support General Cody and argued that MRAPs were a “rapidly evolving requirement over the past three months.”<sup>12</sup>

Almost 3 years after units in the field submitted their requests for MRAPs, the Pentagon requirements system had moved to the point where senior Service leadership could invite Congress to pay for a large number of the vehicles if it was willing to do so over and above the Pentagon's normal budget and its warfighting supplemental. Two months later, Secretary Gates announced MRAPs were the Pentagon's number-one acquisition priority. Shortly thereafter, the JROC validated huge MRAP requirements, first for 7,774 and then for 15,374 vehicles.

**Strategy Significance: The MRAP Impact.** Fielding MRAPs would have supported both the U.S. operational strategy under General Casey and the substantially revised U.S. approach to the insurgency under General David Petraeus. With encouragement from civilian leadership looking forward to a withdrawal of some U.S. forces, Casey's operational strategy was to pull U.S. forces back and reduce casualties while pushing Iraqi forces forward into the fight. Fielding MRAPs would have complemented Casey's strategy well by better protecting U.S. forces as they moved to and from their protected enclaves, reducing political pressure for rapid withdrawal, and buying time for the transition to reliance on the Iraqi army and police. When MRAPs were finally approved as a requirement for U.S. forces in mid-2007, General Petraeus's new

*an approved MRAP requirement did not guarantee the program a high priority, as was soon made clear by House Armed Services Committee testimony*



MRAPs wait to be unloaded from USNS *Pililaau* at Shuaybah Port, Kuwait

U.S. Navy (Kelvin Surgenor)

strategy was just being implemented. He supported the dispersion of an increasing number of U.S. forces (the so-called surge of five additional Army brigades) among the Iraq population, principally in Baghdad. The acquisition system was already primed to move quickly on MRAPs before the Iraq War began because Army engineers had negotiated the Army requirements process well enough to obtain a handful of MRAP prototypes for clearing mines from transportation routes.<sup>13</sup> This fact, along with the support of Congress and Secretary Gates, allowed more than 10,000 MRAPs to be fielded in record time—about a year and a half.

The MRAPs made a significant impact once they arrived in theater, but their effect was obscured by the decline in violence that accompanied the American shift in strategy under General Petraeus. In addition to other factors such as cooperation with Sunni tribal leaders, the surge in U.S. forces and General Petraeus's emphasis on population security helped produce a sharp drop in violence—including IED attacks—from summer 2007 onward. That drop meant fewer U.S. casualties. As expected, American casualties (fatalities and wounded) from IED attacks dropped even further after MRAPs arrived. By the time 10,000 MRAPs were deployed in December 2008, the percentage of U.S. casualties in Iraq attributable to the IED attacks that MRAPs were designed to defend against had dropped precipitously. As figure 3 illustrates, when MRAPs began to flow to Iraq in November 2007, almost 60 percent of U.S. casualties were attributed to IEDs. Just over a year later, with 10,000 MRAPs in country, only 5 percent of casualties were attributable to IEDs, even though insurgents were targeting the vehicles with IEDs for symbolic reasons.<sup>14</sup> In short, General Magnus's testimony in March 2007 to the effect that MRAPs could "cut casualties by perhaps as much as two-thirds" seems well founded.

It is natural to speculate about the impact of fielding MRAPs earlier. Using the same MRAP fielding timelines from later in the war, and assuming other factors are held constant, we can postulate the effect if MRAPs had been fielded after the receipt of the first urgent needs statement in February 2005. Arguably, MRAPs would have achieved an even more dramatic reduction in IED effectiveness earlier in the war since other counter-IED efforts were not yet bearing fruit. But even the two-thirds

reduction in IED-related (not total) fatalities postulated by General Magnus in 2007 would have been dramatic (see figure 4). Such a drop in casualties would have reduced political pressure for withdrawal and bought time for Casey's strategy of pushing Iraqi forces forward, just as it facilitated the strategy of securing the population that General Petraeus supported.

### Explaining Delayed Fielding

The overview of the Pentagon's record on fielding MRAPs corrects some mistaken impressions and substantiates some popular concerns. The following points bear emphasis:

- The Pentagon was poorly prepared for irregular warfare and the IED ambush tactics it encountered in Iraq.

- The IED threat evolved, but all types of IED attacks—side, underbody, and EFP—were evident by 2004 or 2005 at the latest, so the need for better armored vehicles requested by commanders in the field was evident.

- While the acquisition system had to be pushed to provide armor kits and up-armored Humvees faster, the Pentagon did make special efforts to address the IED problem.

- Despite huge resources (for example, \$12.4 billion for JIEDDO from 2006 to 2008), the new organizations did not have the authority to tackle the IED problem in a comprehensive manner—particularly where armoring vehicles was concerned—and

instead focused on attacking the precursors to IED explosions.

- Senior military leaders only validated better armored vehicle requirements under pressure from two Secretaries of Defense and Congress, despite the demonstrated effectiveness of better armored vehicles and early appeals from field commanders.

- The acquisition system fielded effective MRAPs quickly once they were approved and funded not only because Congress and Secretary Gates made them a top priority but also because the system had already developed and tested MRAP prototypes.

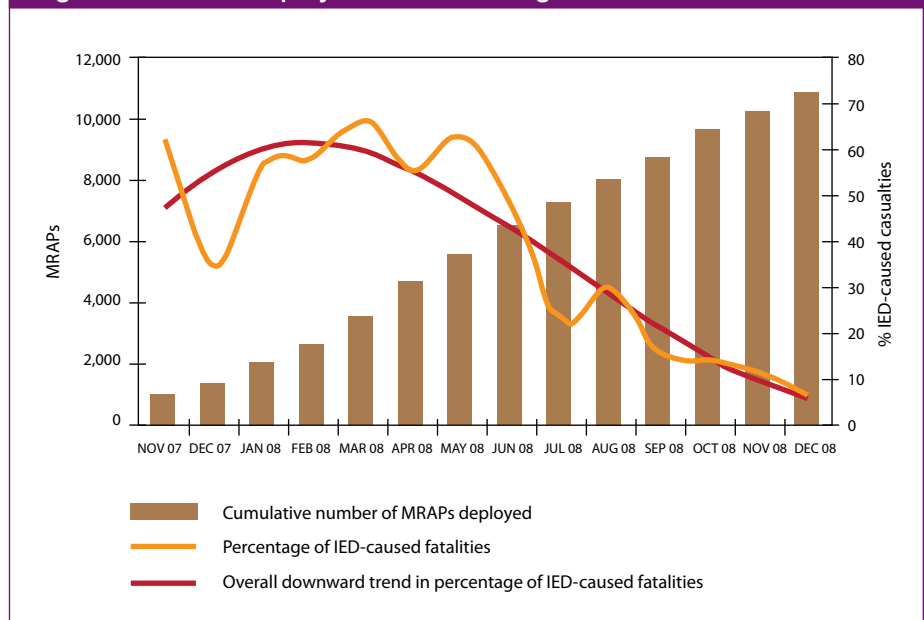
In retrospect, it is clear that the acquisition system was not responsible for the Pentagon's lack of preparedness for irregular warfare or its inability to respond quickly to the need for better armored vehicles. The

*testimony in March 2007 to the effect that MRAPs could "cut casualties by perhaps as much as two-thirds" seems well founded*

glaring deficiency was in the Pentagon's requirements system, which requires further explanation.

**Armored Vehicles and Military Requirements.** The major tradeoffs between MRAPs and lighter tactical vehicles were well understood from the beginning. As

Figure 3. MRAPs Deployed and Percentage of IED-caused Casualties





Representative Hunter noted, the advantages the MRAP has over a Humvee are clear: "It's a simple formula. A vehicle that's 1 foot off the ground gets 16 times that [blast] impact that you get in a vehicle that's 4 feet off the ground," such as the MRAP.<sup>15</sup> However, the higher clearance and heavier armor also make the vehicle less stable and diminish mobility, making it impossible to navigate narrow urban streets or rough off-road terrain. The new MRAP All Terrain Vehicle being developed for the rugged terrain of Afghanistan, where IED use and effectiveness are on the rise, is smaller and designed to minimize the tradeoff between mobility and survivability. The future vehicle is supposed to provide the "same level of protection as the previous MRAPs [used in Iraq], but with the

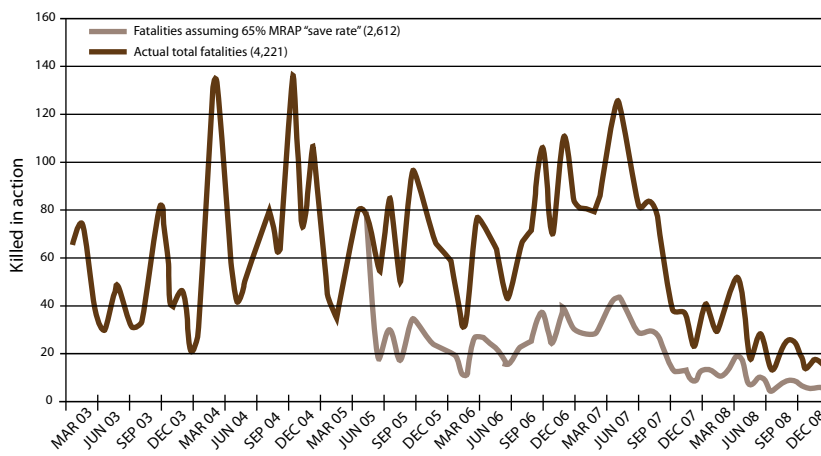
mobility of a Humvee,"<sup>16</sup> which is a difficult engineering challenge. Since force protection requirements vary from one irregular conflict to another, the optimum number and mix of armored vehicles, and the way they balance mobility, survivability, and other attributes, is not self-evident. The relative value of survivability, mobility, and other armored vehicle attributes is a function of multiple factors, including the threat posed to U.S. forces, which evolved over time.

That said, the evolution of the IED threat does not adequately explain the resistance to purchasing MRAPs for U.S. forces. First of all, the requirements system was slow to validate the need for the vehicles even after insurgents were using all the major types of IEDs. Moreover, Department of Defense (DOD) experts

were advising the Iraq military early on that they needed MRAPs for counterinsurgency, so their value for irregular warfare was understood. The reality is that decisionmakers in the Pentagon's requirements system were not enthusiastic about any additional armor, much less heavy, expensive MRAPs. Decisions to provide additional armor were imposed on the system, first by Secretary Rumsfeld and then by Secretary Gates. The lack of enthusiasm for additional armor was manifest in the argument made by force development leaders that insurgents would simply build bigger IEDs in response, and thus "you can't armor your way out of this problem."<sup>17</sup>

The contention that additional armor is futile because it can be defeated is not a good requirements argument. By that logic,

**Figure 4. Hypothetical Reduction in Fatalities from Earlier Fielding of MRAPs**



*the lack of enthusiasm for additional armor was manifest in the argument made by force development leaders that insurgents would simply build bigger IEDs in response*

we would never use armor for any purpose. Armor has value not because it is invulnerable but because it makes the enemy's job more difficult and the tasks of U.S. forces easier. As one commander of a division in Baghdad noted, MRAPs forced insurgents to build bigger and more sophisticated bombs. Those bombs take more time and resources to make and set up, which gives U.S. forces a better chance of catching the insurgents in the act. The extra armor also boosts the confidence of U.S. troops and permits a quick response to ambushes. The requirement for MRAPs was acknowledged slowly because they are useful primarily for a limited defensive purpose in irregular warfare campaigns such as Iraq and Afghanistan that Service leaders prefer to avoid and hope will be short-lived. In this regard, the Pentagon requirements system was true to its historical mindset, which discounts the importance and persistence of irregular warfare.

**Irregular Warfare and Force Protection.** Pentagon officials defend the general lack of readiness for IEDs by arguing the threat could not have been anticipated, but the need for better vehicular protection was evident long before the intervention in Iraq. As is well understood, irregular warriors typically hide among noncombatants, so they



MRAPs on assembly line in Ladson, South Carolina



are not easily identified and defeated and use ambushes and other hit-and-run tactics to bleed and frustrate regular forces. Because insurgents are hard to find and use ambush tactics, a patient strategy of securing the population is required to defeat them. When the population feels secure, it is more likely to provide information to help locate the insurgents and avoid their ambushes.

Yet such a patient strategy requires sustained support from the U.S. public, which is more likely to offer that support when costs, including American casualties, remain low in comparison with perceived national interests and discernible progress. Since the Iraq War was controversial from the beginning and progress was not evident, it was particularly important to limit casualties. The number of Americans who thought the level of U.S. military casualties in Iraq was “acceptable” given the goals of the war dropped from a slight majority in June 2003 to 21 percent by the end of 2006.<sup>18</sup> Support in Congress declined as well, and members of both parties were emphatic about the need to give the military every possible means of reducing casualties.

Thus, force protection in irregular warfare is a strategic imperative because

costs must be kept low in comparison with perceived interests and progress, and it is a tactical imperative because hit-and-run attacks at close quarters and from any direction are the norm. This is why counterinsurgents historically invest more in key infrastructure protection, static fortifications to protect lines of communication (blockhouses or fortified operating bases), and improved force protection on the march. Convoys that transport and supply the forces that constantly pursue the insurgents and protect the population must include well-armored vehicles that serve as firing platforms to quickly counter ambushes.

Lessons from past U.S. participation in irregular warfare emphasize the importance of force protection and armored mobility.<sup>19</sup> The up-armored Humvee program originated with the U.S. intervention in Somalia, but soon after U.S. forces left there the program was phased out, only to be rushed forward again when troops were sent to Bosnia. Both of these emergency acquisition efforts waned quickly after the intervention. Only the U.S. Army Military Police, which specialize in population security, showed sustained interest in the up-armored Humvee program and

ASVs. By the time U.S. forces went to Iraq, only 2 percent of the Army’s 110,000 Humvees were armored, and only the Military Police were equipped with ASVs. For these and other reasons, the DOD inspector general’s report on MRAPs correctly concluded that DOD should have been better prepared to provide armored vehicles for irregular warfare.<sup>20</sup>

Two qualifications may be raised to the proposition that the Pentagon should have been better prepared for the enhanced vehicular armor requirements of irregular warfare. First, force protection is not an end in itself. Instead, “aggressive saturation patrolling, ambushes, and listening post operations must be conducted, risk shared with the populace, and contact maintained.”<sup>21</sup> Withdrawing inside of large, well-fortified vehicles may seem like the tactical equivalent of retreating to large bases. On the contrary, as the new U.S. counterinsurgency manual notes, counterinsurgents must treat “every logistic package or resupply operation [as] a mounted combat operation” and appreciate the need for special equipment, including up-armored vehicles and specialized mine-clearing equipment (that is, MRAPs).<sup>22</sup> A higher level of protected mobility for troops conducting

Soldier views damage to a vehicle caused by roadside IED in Baghdad



U.S. Army (Ronald Shaw, Jr.)

counterinsurgency supports rather than undermines an aggressive tactical spirit.

The second qualification is that prior to Iraq it was not clear that DOD needed to invest in a *large* fleet of MRAPs. As noted, determining the optimum number and mix of armored vehicles for irregular warfare is a difficult requirements problem. However, one way to illustrate the extent to which the United States should have anticipated the force protection requirements in Iraq is by comparing the U.S. experience there with the performance of other countries. Historically, forces well prepared for irregular warfare have fielded MRAP variants, but more typically they have had to compromise between better protected armored personnel carriers (APCs) with heavier armor and less visibility for the occupants and more mobile vehicles

the absence of up-armored Humvees, ASVs, or other armored car variants prior to Iraq is much more difficult to justify than the pre-war absence of a large fleet of much more expensive and heavy MRAPs.

Once the nature of the IED challenge in Iraq became apparent, however, MRAPs should have been fielded expeditiously. Instead, the Services hoped to get by with less expensive up-armored Humvees. Adding armor to a Humvee costs only \$14,000; up-armored Humvees cost twice as much as the unarmored version (about \$200,000), and MRAPs can cost three to seven times as much as an up-armored Humvee, from \$600,000 to over \$1 million per vehicle. The \$25 billion cost projected for MRAPs is high but not indefensible. Congress provided annual supplemental war funding in the hundreds of billions of dollars, and the overall cost

on military occupation, ranges from \$1 million to \$2 million each. Considered in this context, and given their value for countering IEDs and reducing casualties, MRAPs were more than a bargain, and the same is true of up-armored Humvees. Yet DOD refused to invest in better armored vehicles such as the up-armored Humvee before Iraq and was slow to field the MRAPs during the conflict. This tendency to ignore irregular warfare requirements is not an aberration but a persistent trend.

***The Pentagon Record on Irregular Warfare Requirements.*** Incredibly, several months after the Secretary of Defense declared MRAPs the top defense acquisition priority, his subordinates were explaining to Congress that MRAPs would be put in storage because “Service chiefs have indicated that these are heavy, large vehicles that might not fit well with mobile expeditionary missions.”<sup>25</sup> The observation that MRAPs will not be a good fit for future conflicts is odd since DOD strategy and planning guidance has long insisted irregular warfare will be a major element of the future threat environment. The perspective of the Service chiefs is at odds with national security policy and defense planning, but it is entirely consistent with historic Service positions in the Pentagon’s longstanding debate over the nature and precise definition of irregular warfare capabilities.

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with better visibility and less protection. Some form of armored car variant is typically the result. Other national forces deployed to Iraq and Afghanistan with better armored car variants than the United States, but they too were left scrambling for MRAPs.<sup>23</sup> If we hold ourselves to the standards of other countries,

of the Iraq War is estimated at over \$1.6 trillion. Moreover, the cold-blooded observation made by Senators<sup>24</sup> and other sources is that protecting people in an all-volunteer military is cheaper than replacing them. The cost of enlisted casualties averages \$500,000 each, while the cost for officer casualties, depending



U.S. Army (Marcus J. Quarterman)

**Soldiers install up-armored kits on Humvees in Afghanistan**



This debate heated up in response to the war on terror, figured prominently in the 2006 Quadrennial Defense Review, and was further elevated by Secretary Gates, who made the case publicly that the Pentagon is unable to generate a proper balance of conventional and irregular warfare capabilities. To correct this shortcoming, Secretary Gates issued a policy directive that declares irregular warfare is just as important as traditional warfare and that the military must be equally proficient at both; then he promulgated a new defense strategy that emphasizes irregular warfare capabilities; then he followed up by announcing the termination or reduction of some major weapons programs to pay for more irregular warfare capabilities. Yet past experience suggests that it will be difficult to thrust irregular warfare capabilities on the Services.

When pressed to invest in irregular warfare, the Services argue equipment should be equally effective in all types of conflicts. In the case of armored vehicles, the argument is made that those currently under development will meet all future requirements, including those for irregular warfare. Thus, the emerging preference is for “scalable armor” added to an all-purpose chassis that bears up well regardless of the levels of armored protection it carries. Such versatility is desirable but of course difficult to achieve. When circumstances demand the urgent procurement of irregular warfare equipment, such capabilities typically are abandoned shortly after the conflict fades from memory. This happened with up-armored Humvees and, before that, with slower fixed-wing aircraft for reconnaissance and close fire support as well as brown and green water vessels that patrol coastlines and inland waterways. The likely prognosis for MRAPs would be the same absent intervention by the Secretary of Defense.

Secretary Gates wants to “institutionalize procurement of [irregular] warfare capabilities” so they can be quickly fielded when needed. The source of resistance to this goal is not the Pentagon’s acquisition system. As acquisition professionals emphasize and the MRAP experience illustrates, it is impossible to procure anything without a validated requirement and congressional funding. Once senior leadership validated the requirement and provided resources, the acquisition system fielded large numbers of MRAPs within 18 months—an accomplishment often described as an industrial feat not seen

since World War II. Instead, the long delay in fielding MRAPs is attributable first to the Pentagon’s force development or requirements system, second to Service cultures that generally undervalue irregular warfare capabilities, and finally to the Pentagon’s decisionmaking structure and processes, which typically favor specialization over integration of diverse areas of expertise to solve complex problems. Secretary Gates seems to appreciate the complexity of the problem. He has argued, “In the end, the military capabilities we need cannot be separated from the cultural traits and reward structure of the institutions we have.”<sup>26</sup> Hopefully, the Secretary’s broader understanding of the problem—and hence the proper scope of required reform—will not get lost in the rush to revise the current defense program or reform the acquisition system. **JFQ**

## NOTES

<sup>1</sup> Robert M. Gates, “The National Defense Strategy: Striking the Right Balance,” *Joint Force Quarterly* 52 (1<sup>st</sup> Quarter, January 2009), 2–7, available at <[www.ndu.edu/inss/Press/jfq\\_pages/editions/i52/1.pdf](http://www.ndu.edu/inss/Press/jfq_pages/editions/i52/1.pdf)>.

<sup>2</sup> Andrew F. Krepinevich and Dakota L. Wood, *Of IEDs and MRAPs: Force Protection in Complex Irregular Operations* (Washington, DC: Center for Strategic and Budgetary Assessments [CSBA], 2007); Julian E. Barnes and Peter Spiegel, “Military Thinks Twice on Fortified Trucks,” *The Los Angeles Times*, December 27, 2007, available at <[www.latimes.com/news/nationworld/nation/la-na-mrap-27dec27,0,843075.story?coll=la-home-center](http://www.latimes.com/news/nationworld/nation/la-na-mrap-27dec27,0,843075.story?coll=la-home-center)>.

<sup>3</sup> Barnes and Spiegel.

<sup>4</sup> Matthew Cox and Megan Scully, “Pentagon Vows to Add Armor to Vehicles by June,” *Defense News*, January 3, 2005, 11.

<sup>5</sup> Matthew Cox and Megan Scully, “\$4 Billion Pledged to Make Trucks, Humvees Safer,” *Defense News*, January 3, 2005, 11.

<sup>6</sup> House Armed Services Committee, hearing on Department of Defense (DOD) acquisition, April 21, 2004.

<sup>7</sup> John Bennet, “What Next for U.S. Joint Anti-IED Efforts,” *Defense News*, September 17, 2007, 1.

<sup>8</sup> Brigadier General D.J. Hejlik, USMC, “Universal Need Statement, Urgent, Mine Resistant Ambush Protected (MRAP) Vehicle,” 2005, available at <<http://blog.wired.com/defense/files/MRAP.pdf>>.

<sup>9</sup> Sharon Weinberger, “Report: IED Crisis ‘Avoidable’ with Armored Trucks,” *Wired.com*, February 19, 2008, available at <<http://blog.wired.com/defense/2008/02/report-ied-cris.html>>. The report is available at <[http://blog.wired.com/defense/files/franz\\_gayl\\_complete\\_mrap\\_study\\_archive.pdf](http://blog.wired.com/defense/files/franz_gayl_complete_mrap_study_archive.pdf)>.

<sup>10</sup> Inspector General, DOD, *Marine Corps Implementation of the Urgent Universal Needs Process for*

*Mine Resistant Ambush Protected Vehicles* (Arlington, VA: DOD, 2008), available at <<http://pogoarchives.org/m/ns/dod-ig-report-20081208c.pdf>>.

<sup>11</sup> Hearing on National Defense Authorization Act for Fiscal Year 2008 and Oversight of Previously Authorized Programs before the Committee on Armed Services, House of Representatives, 110<sup>th</sup> Congress, 1<sup>st</sup> Sess., Readiness Subcommittee Hearing on Budget Request on Adequacy to Meet Readiness Needs, March 13, 2007 (Washington, DC: U.S. Government Printing Office, 2008).

<sup>12</sup> Ibid.

<sup>13</sup> COL Timothy Goddette, USA, Maneuver Support and Sustainment Systems Command, interview, February 27, 2009, Arlington, VA.

<sup>14</sup> Andrew Gray, “New U.S. Armored Trucks Are Symbolic Targets: General,” *Reuters*, August 24, 2007, available at <[www.reuters.com/article/latestCrisis/idUSN24356492](http://www.reuters.com/article/latestCrisis/idUSN24356492)>.

<sup>15</sup> Peter Eisler, Blake Morrison, and Tom Vanden Brook, “Pentagon Balked at Pleas from Officers in Field for Safer Vehicles: Iraqi Troops Got MRAPs; Americans Waited,” *USA Today*, July 16, 2007, 1.

<sup>16</sup> Matt Sanchez, “Defense Department Designs ‘Baby MRAP’ for War in Afghanistan,” *Fox News*, April 1, 2009.

<sup>17</sup> Rick Atkinson, “You Can’t Armor Your Way Out of this Problem,” *The Washington Post*, October 2, 2007, A1.

<sup>18</sup> Karlyn Bowman, “Public Opinion on the War with Iraq,” American Enterprise Institute, updated March 19, 2009, available at <[www.aei.org/publications/filter.all.pubID.22142/pub\\_detail.asp](http://www.aei.org/publications/filter.all.pubID.22142/pub_detail.asp)>.

<sup>19</sup> See the vignette in the U.S. Army Field Manual 3–24/Marine Corps Warfighting Publication 3–33.5, *The U.S. Army/Marine Corps Counterinsurgency Field Manual* (Washington, DC: Headquarters Department of the Army, 2006), “Vietnam: Meeting the Enemy and Convoy Security,” 8–6; also see Christopher J. Lamb, “The Impact of Information Age Technology on Operations Other Than War,” in *War in the Information Age: New Challenges for U.S. Security Policy*, ed. Robert L. Pfaltzgraff and Richard H. Shultz (Washington, DC: Brassey’s, 1997).

<sup>20</sup> Inspector General, Marine Corps Implementation.

<sup>21</sup> U.S. Army Field Manual 3–24/Marine Corps Warfighting Publication 3–33.5, 1–149, 5–36, 8–18, 8–23, 8–24.

<sup>22</sup> Ibid.

<sup>23</sup> For example, see Andrew Chuter, “U.K. to Rush Armored Vehicles to Duty,” *Defense News*, October 9, 2006. The same is true for Canada, Italy, and France.

<sup>24</sup> Senator Joseph Biden, speech on MRAPs, Congressional Record 153, no. 54, March 28, 2007, available at <[www.defenseindustrydaily.com/files/2007-03-28\\_Biden\\_MRAP\\_Amendment\\_Speech.doc](http://www.defenseindustrydaily.com/files/2007-03-28_Biden_MRAP_Amendment_Speech.doc)>.

<sup>25</sup> Ibid.

<sup>26</sup> Gates, 7.