

Jane's International Defence Review

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Retasking MRAP: Life after Afghanistan

Proven life savers in asymmetric Afghanistan, but what does life have in store for MRAPs in future potentially more symmetrical world scenarios? Shaun Connors reports

The MRAP acronym has origins in the 2006-launched US Marine Corps (USMC)-led Mine Resistant Ambush Protected (MRAP) vehicle programme. Since that first appearance the MRAP acronym has become an overused generic term for almost any wheeled vehicle with varying degrees of similar capabilities. In day-to-day language, MRAP is now probably as well-known (and by default inappropriately used) as JCB is for a backhoe loader, or Jeep might be for an SUV.

For the purposes of this article, an MRAP is defined as one of the five designs (Caiman, Cougar, MaxxPro, RG-31, RG-33) ordered under the MRAP programme, or the sole design ordered under the separate army-led M-ATV (MRAP-All Terrain Vehicle) programme.

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Over around three and half years and for an estimated cost of USD50 billion the US military ordered approximately 29,000 MRAPs. This 2010 image shows an early Cougar Cat 1 4x4 (left) and a MaxxPro Plus (right). (US DoD)

Vehicle surplus

With combat operations in Afghanistan heading towards their conclusion, the US military quickly found itself with a growing MRAP stockpile that it potentially did not need, probably could not afford to retain, and that may not meet future operational needs. Decisions had to be made.

Ultimately, and as a result of the MRAP Study III that was approved on 14 March 2013, the US Army will now divest 7,456 MRAPs and retain 8,585 from two Original Equipment Manufacturers (OEMs) - Navistar and Oshkosh. The earlier MRAP Study II, which proved unaffordable, had suggested that 16,000 MRAPs would be retained. The bulk of those kept will ultimately be mothballed in prepositioned stocks around the world, with another 1,073 assigned for training activities. The remainder will be spread among the active force.

The army will also convert surplus BAE Systems RG-33L 6x6 and General Dynamics Land Systems Canada (GDLS-C)/BAE Systems RG-31 Mk5E 4x4 MRAPs into Medium Mine Protected Vehicle (MMPV) Type 1 (RG-33L) and Type 2 (RG-31) configurations. The RG-33, originally developed for the MRAP requirement, was selected in December 2007 to meet the army's MMPV requirement. In April 2008 a USD132 million delivery order for an initial 179 MMPVs was placed. Under the MMPV programme - with a USD2.288 billion quoted value - it had been proposed that up to 2,500 RG-33s (designated Panther) would be procured for use by US Army Engineers and Explosive Ordnance Disposal teams through 2015.



In addition to those retained as MRAPs, the US Army will also convert surplus RG-33L 6x6 and RG-31 Mk5E

4x4 into Medium Mine Protected Vehicle (MMPV) Type 1 (RG-33L) and Type 2 (RG-31) configurations. (US DoD)

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In December 2012, BAE Systems received an initial USD37.6 million contract to support the conversion of 250 RG-33Ls into MMPV configuration. Current requirements call for 712 MMPV Type 1s (in three variants) and 894 MMPV Type 2s.

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Retained stocks

For retained MRAPs, early estimates were that by the end of 2016 the US Army would have spent around USD1.7 billion to Reset and upgrade these to their respective common standard. Figures from early 2014 suggested the army was anticipating the cost to return and Reset each MRAP would be up to between USD250,000 and USD300,000. Those figures are yet to be confirmed as according to *IHS Jane's* sources, quantities Reset to date have been insufficient for reliable estimates to be generated.

Of the 8,585 MRAPs to be retained by the army, 5,651 (including 250 for SOCOM) are Oshkosh M-ATVs. When the smaller quantities retained by the other services are included, about 80% of the 8,722 M-ATVs delivered are to be retained, the greatest percentage of all MRAP retentions.



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M-ATVs were delivered in two primary variants. The base model is designated M1240, M1240A1 with an Underbody Improvement Kit (UIK) fitted (this mounting Objective Gunner Protection Kit [OGPK] manned turret), and M1277 when fitted with M153 CROWS remote-controlled weapon station (RCWS). The SOCOM-specific variant is designated M1245 and M1245A1 with UIK fitted. Work on Resetting the around 7,000 M-ATVs retained to a common build standard is currently under way at Oshkosh's Wisconsin facility, and the Red River Army Depot.

Oshkosh was awarded an initial 500-vehicle M-ATV Reset contract in August 2014. Three additional contract options for 100 vehicles each were awarded in December 2014. Total contract value is in excess of USD77 million, with sources suggesting that Reset cost per vehicle is currently coming in below target. Deliveries are under way and will continue through September 2015.

Reset work centres on returning vehicles to Low Rate Initial Production (LRIP) 22 standard: essentially the build standard for the final M-ATV production batch. LRIP 22 includes upgrades such as the UIK and enhanced Automatic Fire Extinguishing System (AFES). Reset work also adds Engineering Change Proposals (ECPs) that include acoustic signature reduction (muffler), Modular Ammunition Restraint System (MARS) ammunition storage, and some GFE relocation.

Proposing the Thales Bushmaster and PVI's Alpha, Oshkosh may have lost out on a slice of the original MRAP award, but as sole M-ATV supplier, to date the company has received contract awards in excess of USD6.6 billion.

With MaxxPro, Navistar secured the bulk of the USMC-awarded MRAP Indefinite Delivery/Indefinite Quantity contract orders, almost 50% in fact, with total orders valued at around USD13 billion. Between 2007 and 2011 Navistar delivered 8,780 MaxxPro vehicles in a range of evolving configurations. That figure includes 390 wreckers, but excludes examples of 15 Dash supplied to Singapore, and FMS deliveries to South Korea (10 Dash DXM) and coalition forces operating in Afghanistan (80 Dash DXM). Add in 1,872 DXM independent suspension retrofits, 2,717 rolling chassis retrofits, plus numerous other upgrade awards, and excluding any current post-Afghan Reset awards, to date Navistar has earned around USD14 billion from MaxxPro-related business.

More than 35% of MaxxPro deliveries will be retained, making it the second-largest contributor to post-Afghan inventories, and the only original MRAP retained as such by the army.

Sources suggest contributory factors in the army's decision to retain the MaxxPro in preference to other designs were feedback from the user and that, with the MaxxPro Survivability Upgrade (MSU) kit fitted, tests have proven MaxxPro to be the most survivable of all variants. Additionally, the Pentagon's fiscal year 2011 annual report from the Office of the Director, Operational Test & Evaluation (DOT&E), declared the MaxxPro Dash DXM to be operationally effective and reliable, its figure of 1,259 mean miles between operational mission failure (MMBOMF) being more than double the operational requirement of 600 miles.



In excess of 35% of 8,780 MaxxPro delivered will be retained, making it the second largest contributor to post-Afghan inventories, and the only original MRAP retained as an MRAP by the Army. (US DoD)

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All At Sea

In June 2014 the USMC more than doubled its original MRAP requirement from 1,231 (490 M-ATVs, 713 Cougas, 28 Buffalo Mine Protected Clearance Vehicles [MPCVs]) to 2,510. Given a well-publicised aversion to anything that hinders their traditional expeditionary role, this increase is interesting, with some sources suggesting the decision was driven more by external pressure than true desire.



The USMC will retain 2,510 MRAP in two variants including the GDLS-FP's Cougar; this Cougar CAT II 6x6 is fitted with Oshkosh's TAK-4 independent suspension upgrade. (US DoD)

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The USMC will retain two MRAP variants in Oshkosh's M-ATV and GDLS-FP's Cougar, plus a smaller quantity of Buffalo vehicles. Reset is being carried out at Marine Corps depots in Barstow, California, and Albany, Georgia, with some vehicles being Reset at Red River. The USMC has been designated as the Primary Inventory Control Authority (PICA) for Cougar, smaller quantities of which are being retained by the USAF and navy.

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British Bulldogs

Throughout the Afghan campaign several thousand protected vehicles, including MRAPS/M-ATVs, were loaned and/or donated by the US military to coalition forces. Others (e.g. Germany with Dingo) opted to develop their own MRAP-class designs, while some (e.g. Spain with RG-31) opted to procure types proven by the US military. In all cases, numbers involved never reached four figures and relate closely to the intensity of involvement in the Afghan campaign.

With that in mind it should be no surprise that second to the United States the British Army currently has the largest MRAP fleet. Between 2006 and 2011 the UK Ministry of Defence (MoD) ordered just over 750 examples, that figure nudging 800 if 30 surplus USMC vehicles for training and 14 Buffalo MPCVs are included.

The United Kingdom's MRAP of choice is Cougar, and in the three UK-specific variants - Ridgback 4x4, Mastiff 6x6, and Wolfhound 6x6. To meet UK requirements (including protection enhancements) a considerable amount of work was done on these vehicles in the United Kingdom prior to delivery, the bulk of this by the then NP Aerospace.

The majority of the fleet are Mastiffs, with 451 delivered in three progressively enhanced variants, Mastiff 1 (108), Mastiff 2 (198), and Mastiff 3 (145). Based on the Mastiff 3 configuration, Wolfhound is essentially a crewcab Mastiff, the primary role of which is support for Mastiff/Ridgback and 105 mm Light Gun tractor/limber. Three versions were delivered under two orders, Utility (81), EOD pod (39), and Military Working Dog (MWD) pod (5).

In mid-2013 the UK MoD confirmed that as part of a GBP1.5 billion (USD2.2 billion) 10-year package, and along with around 570 other assorted Protected Mobility fleet vehicles procured for operations in Iraq and Afghanistan, it would be retaining 169 Ridgbacks, 430 Mastiffs and 125 Wolfhounds.

Following a competition, in April 2014 it was announced that a consortium headed by Morgan Advanced Materials - Composites and Defence Systems (formerly NP Aerospace) had been awarded a contract by Defence Equipment & Support (DE&S) to carry out post-design services (PDS) for the 20-plus variants that make up the UK's Cougar-based fleet. The deal runs for two years but could be extended for as long as seven. Initial value is put at GBP20 million.

Following delays caused by a protesting losing bidder, the award of a GBP30 million upgrade contract to General Dynamics Land Systems - Force Protection Europe (GDLS-FPE) for the UK's Cougar-based fleet was confirmed in September 2014.

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To ensure British soldiers get their best out of their mobility-limited Cougar-based fleet, a purpose-designed off-road training course was built at DST Leconfield; this early Mastiff 1 is shown during regular driver training courses. (Shaun C Connors)

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Aware of mobility limitations, in 2010 the MoD evaluated two possible suspension upgrades for UK MRAPs and Ridgbacks were fitted with Oshkosh's TAK-4 (shown) and a Ricardo-engineered revised parabolic leaf spring set-up. (Shaun C Connors)

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PROTECTING THE PROTECTORS

Post Reset activities, for the many thousands of MRAPs to be mothballed it is not quite as simple as just parking them up in a large hangar somewhere. Anybody that has ever stored a car for a protracted period will know that it is not as simple as locking the doors and walking away. At least it is not if you expect it to start again the first time you turn the key on your return. Quite simply, despite their ostensibly rugged outdoors nature military vehicles are no different and without very careful preparation and management, they start to deteriorate the moment they are parked up.

In answer to this storage problem, in October 2012 the USMC awarded Transshield a USD4.5 million contract for 3,700 covers to protect its MRAP fleet. In November 2013 it was announced that Transshield had been awarded a USD8.3 million contract to supply covers for more than 4,500 MRAPs in the US Army fleet.

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LAW & DISORDER?

Since 2006 close to 450 surplus MRAPs have been handed out by the US government to state and local law enforcement agencies in most of the 50 states. Examples have been delivered with just 8 miles showing on the odometer, with the recipient usually paying little more than shipping costs for a vehicle that originally cost the government anything up to a USD1 million.

Transferred under the 1033 programme, which authorises the transfer of surplus Department of Defense material to federal and state agencies, the arrival of surplus MRAPs has often been controversial. Law enforcement agencies argue that protection of officers is paramount and an MRAP offers the best available protection to those officers in all conceivable high-risk scenarios.

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Without careful preparation and management, vehicles will start to deteriorate the moment they are parked up and left. (Transshield)

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Since 2006 US local law enforcement agencies have received around 450 surplus MRAPs, often paying just shipping costs for a USD1 million vehicle, from the US government. (Columbia Police Department)

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