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Simulators Train Marine Corps MRAP Drivers

The joint Mine Resistance Ambush Protected (MRAP) program, intended to protect US warfighters from the threat of improvised explosives devices (IEDs) in Iraq and Afghanistan, has been impressive by many standards. Less than 18 months after the project was launched in February 2007, more than 10,000 vehicles had been delivered and on September 4, 2008 the Marine Corps Systems Command, the project lead, ordered the last of 15,771 MRAPs authorized by the Joint Requirements Oversight Committee.

However, with priority given to expediting the shipment of vehicles to theater few have been available to train drivers at their home stations before deployment.

Marine drivers are being trained initially on the USMC Operator Driving Simulator (USMC ODS) developed by FAAC Incorporated (Booth #1245), part of Arotech Corporation's Training and Simulation Division.

In the final stage of the MK 23 Marine Tactical Vehicle Replacement (MTVR) Training System project the Marine Corps acquired four FAAC ODS units, already used by the US Army to train Tactical Wheeled Vehicle drivers. Four were fielded in October-November 2007: three mounted in trailers and one in static configuration. To provide protection against small arms fire, rocket propelled grenades, IEDs and other threats, MTVRs employed in the Global War on Terrorism (GWOT) were fitted with the Marine Armor System, which changes the vehicles' handling characteristics and significantly reduced the driver's field of view. FAAC developed a kit to replicate the changes to the cabin and new vehicle dynamics software.

Since then, the Program Manager Training Systems (PM TRASYS) Marine Corps Systems Command has extended the USMC ODS project to incorporate other vehicles employed in operations: the M1114 Up-Armored HMMWV, the 4 x 4 Cougar Category I MRAP and the 6 x 6 Buffalo Category III MRAP vehicle. The USMC ODS is the only MRAP simulator now in USMC service, although MRAP Egress Trainers and maintenance trainers are being developed.

"The USMC ODS has been able to systematically address the urgent training requirements as they arise. This contract first addressed Up-Armored HMMWV operations, then Cougar MRAP vehicles, and now the Buffalo route clearance vehicle," said Kurt Flosky, FAAC Executive Vice President. "The ability to easily and quickly add new training capability to the USMC ODS provides for a long-term training solution that adapts to meet changing training needs."

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FAAC had begun work on MRAP training capabilities prior to a contract modification award in December 2007 in anticipation of this urgent training need. The MRAP capability was delivered to Camp

Simulators Train


Screen image from USMC ODS

Pendleton, CA on February 4, 2008, 29 Palms, CA on February 25, and Camp Lejeune, NC on March 13. Each location has single and dual simulator trailers. Another MRAP ODS is scheduled to be declared operational at Marine Corps Base Hawaii on December 15. The USMC ODS represents the USMC's first driver trainer to be deployed to the home bases of the operational force rather than training schools.

FAAC is supplying 20 dual trailers in addition to upgrading the four original systems. The US Marine Corps Reserve (USMCR) will receive 14 of these trailers. An additional contract modification covers three dual trailers for use by the USMCR and one dual trailer and three static systems for use at Camp Smedley D. Butler in Japan. FAAC supplies staff – all former Marines – to operate the MRAP ODS at active duty bases and trains USMCR personnel to operate the systems assigned to the reserve component. The project office anticipates there will be demand for additional systems once unit commanders become familiar with the advantages of driver simulation training, although there is as yet no funded requirement. Captain Garrett Hager, USMC ODS project manager told the *Show Daily* that usage is going up every month.

The USMC ODS is supplied in both static and mobile configurations with one simulator housed in a 38 foot trailer and two in a 44 foot trailer. It comprises four major components: a generic tactical vehicle cab with simulated armor panels; inter-changeable dash panels; a visual system; and an instructor operator station. The trailers can operate using shore power or a built-in generator. All trailers provide heating, ventilation and air conditioning, and have room for parts and spares storage.

PM TRASYS initially selected 3-Degree-of-Freedom motion-seat systems and 3-channel 180°H x 45°V field of view visual systems for the USMC ODS although the next delivery order will feature 6-DOF. More than 100 scenarios are already in use, representing a range of driving conditions. Additional scenarios are being developed to replicate the challenges specific to driving MRAP vehicles, including roll over.

Trainees can complete 20 per cent of the total miles necessary to be licensed to drive a vehicles – 250 miles for the HMMWV (which is the prerequisite to driving an MRAP) or 125 miles for the MRAP – using the ODS. The forthcoming contract modification is expected to include software to replicate the Category II 6 x 6 Cougar; whereas drivers licensed to drive the Category I Cougar are not licensed to drive the the larger Category II vehicle whereas drivers who are licensed on the Category II Cougar can drive both configurations.

"The advantage of this system is that it is a one-stop shop for commanders who can train their Marines on a range of tactical vehicles," said Capt Hager.