

Mine Resistant Ambush Protected (MRAP) Family of Vehicles

Executive Summary

- The Army and Marines will procure 390 Navistar Mine Resistant Ambush Protected (MRAP) Recovery Vehicles (MRV) to fulfill an urgent need to recover MRAP vehicles in Afghanistan.
- The MRAP program procured 53 Force Protection Industries (FPI) Cougar Category (CAT) II Independent Suspension System (ISS) Kits and 250 Navistar Dash Ambulance vehicles.
- The Army Test and Evaluation Command (ATEC) completed the MRAP ISS Limited User Test (LUT) in June 2011 in accordance with the DOT&E-approved Test and Evaluation Master Plan and test plans.
- Based on results from the MRAP ISS LUT, the Navistar Dash ISS is operationally effective and operationally suitable. The Navistar Dash ISS demonstrated the off-road mobility needed to transport units over Afghanistan-like terrain.
- Based on results from the MRAP ISS LUT, the Cougar Ambulance is operationally effective. A unit equipped with the Cougar Ambulance can provide protected transport and urgent medical care for units in Afghanistan. The Cougar Ambulance is not operationally suitable due to its poor reliability, which contributed to its low availability.
- Based on results from the MRAP ISS LUT, the Navistar MRV is not operationally effective and not operationally suitable for recovery operations on cross-country terrain. The Navistar MRV has poor mobility and poor combat towing to recover damaged MRAP vehicles in Afghanistan. These problems were discovered during developmental testing and should have been resolved prior to the LUT. The Navistar MRV is capable of recovering and combat towing damaged MRAP vehicles on flat improved roads. The Navistar MRV is not reliable.

System

- MRAP is a family of vehicles designed to provide increased crew protection and vehicle survivability against current battlefield threats, such as IEDs, mines, and small arms. The DoD initiated the MRAP program in response to an urgent operational need to meet multi-Service ground vehicle requirements. MRAP vehicles provide improved vehicle and crew survivability over the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) and are employed by units in current combat operations in the execution of missions previously executed with the HMMWV.
- This report covers the following MRAP vehicles:
 - FPI Cougar ISS CAT I, CAT II, and Ambulance variants
 - Navistar CAT I Dash ISS and MRV
- The MRAP CAT I vehicle is designed to transport six persons and the MRAP CAT II vehicle is designed to transport 10 persons. The FPI Cougar CAT II Ambulance variant



FPI Cougar Category I



FPI Cougar Category II



FPI Cougar Ambulance



Navistar MaxxPro Dash ISS



Navistar MRAP Recovery Vehicle

is designed to transport up to two litter patients and four ambulatory casualties. The Navistar MRV is designed to recover disabled and damaged MRAP vehicles.

- MRAP vehicles incorporate current Service command and control systems and counter-IED systems. MRAP vehicles have gun mounts with gunner protection kits capable of mounting a variety of weapons systems such as the M240B medium machine gun, the M2 .50 caliber heavy machine gun, and the Mk 19 grenade launcher.

Mission

Units equipped with the MRAP CAT I vehicles will conduct small unit combat operations such as mounted patrols and reconnaissance. Units equipped with MRAP CAT II vehicles conduct ground logistics operations including convoy security, troop and cargo transportation, and medical evacuation. The MRAP Cougar Ambulance variant supports the conduct of medical treatment and evacuation. The MRV supports recovery of disabled and catastrophic damaged MRAP and Stryker vehicles.

Major Contractors

- Force Protection Industries, Inc. – Ladson, South Carolina
- Navistar Defense – Warrenville, Illinois

Activity

- In FY11, the MRAP program continued a capabilities insertion program to acquire and test enhanced capabilities and solutions to integrate across the MRAP Family of Vehicles. The program is managing the capability insertion efforts through Engineering Change Proposals. The major capabilities insertions are the ISS and Command, Control, and Communication Suite.
 - As of October 2011, 390 Navistar MRVs were procured to fulfill an urgent need in Afghanistan.
 - The MRAP procured 53 FPI Cougar CAT II ambulance vehicles.
 - The program has procured 250 Navistar Dash ISS ambulances. These variants are undergoing developmental testing.
 - In June 2011, ATEC completed the LUT of the MRV, Dash ISS, and the Cougar ISS ambulance variants at Yuma Proving Ground, Arizona, in accordance with a DOT&E-approved test plan.
 - In November 2011, the program will execute a LUT at Yuma Proving Ground, Arizona, to examine the operational effectiveness and operational suitability of the Navistar Dash ISS ambulance variant.
 - DOT&E delivered LFT&E findings on the FPI Cougar vehicles with ISS to Congress in June 2011.
- The Navistar Dash ISS Live Fire test program is ongoing and will be completed in FY12.
 - Based on results from the MRAP ISS LUT, the Cougar Ambulance is operationally effective. A unit equipped with the Cougar Ambulance can provide protected transport and urgent medical care for units in Afghanistan. The Cougar Ambulance is not operationally suitable due to its poor reliability, which contributed to its low availability. The Cougar Ambulance demonstrated 367 MMBOMF versus its operational requirement of 600 MMBOMF.
 - Live Fire testing of the Cougar Ambulance indicates the vehicle is survivable.
 - Based on results from the MRAP ISS LUT, the Navistar MRV is not operationally effective and not operationally suitable for recovery operations on cross-country terrain. The Navistar MRV has poor mobility and poor combat towing to recover damaged MRAP vehicles in Afghanistan. The vehicle could not maneuver in soft sandy soil and had difficulty accelerating on hilly terrain. The Navistar MRV demonstrated 271 MMBOMF versus its operational requirement of 600 MMBOMF. These problems should have been resolved by the materiel developer prior to the LUT. The Navistar MRV is capable of recovering and towing damaged MRAP vehicles on flat improved roads.
 - Live Fire testing of the Navistar MRV indicates the vehicle is survivable.

Assessment

- The MRAP ISS LUT focused on two of the most significant Navistar Dash ISS deficiencies identified in the MRAP All Terrain Vehicle (M-ATV) IOT&E. The results from the MRAP ISS LUT indicate that these deficiencies were successfully resolved. The Navistar Dash ISS is operationally effective and operationally suitable. The vehicle demonstrated improved reliability over the solid axle Navistar Dash. The Navistar Dash ISS demonstrated 1,259 Mean Miles Between Operational Mission Failure (MMBOMF) versus its operational requirement of 600 MMBOMF.

Recommendations

- Status of Previous Recommendations. The MRAP program fixed the off-road mobility and reliability of the Navistar Dash identified in the MRAP M-ATV IOT&E.
- FY11 Recommendation.
 1. Prior to conducting an FOT&E, the program should improve the cross-country mobility, vehicle power, and system reliability of the Navistar MRV.