

Armored Tactical Wheeled Vehicles - Army

Executive Summary

- The Army is adding armored cabs to tactical wheeled vehicles. The urban and non-linear battlefields of Iraq and Afghanistan made crews of tactical wheeled vehicles susceptible to small arms fire, mines, IEDs, and rocket-propelled grenades.
- Various tactical wheeled vehicles are undergoing armor upgrade development, which include live fire and operational testing.

System

- The following tactical wheeled vehicle systems designed armor protection kits and began testing in the last fiscal year:
 - The Heavy Expanded Mobility Tactical Truck (HEMTT) is a family of heavy tactical trucks with a carrying capacity of 10 tons.
 - The Palletized Load System (PLS) is a heavy tactical truck with a 16.5-ton capacity, capable of self-loading, unloading, and pulling a 16.5-ton capacity trailer. The PLS is basically the same as the HEMTT, but with a higher weight capacity and an extra axle in the rear. The armored cabs are identical.
 - The M915A5 Line Haul Tractor is a diesel-powered, 6x4 truck tractor system that will be compatible with the M872 and other legacy tankers and trailers.
 - The High Mobility Multi-purpose Wheeled Vehicle (HMMWV) is a light, highly mobile, diesel-powered, four-wheel-drive utility vehicle that is configured as a troop carrier, armament carrier, shelter carrier, ambulance, anti-tank guided-missile carrier, or scout vehicle.
- The following tactical wheeled vehicle systems are in the planning and development stages of up-armorizing their cabs:
 - The Expanded Capacity Vehicle (ECV2) is a HMMWV variant that intends to restore lost payload, performance, and crew protection.
 - The XM1160 Medium Extended Air Defense System (MEADS) Carrier is an extended variant of the Family of Medium Tactical Vehicles (FMTV).
 - The Joint Light Tactical Vehicle (JLTV) will consist of three payload categories: A (3,500 pounds); B (4,000 pounds for the Marine Corps and 4,500 pounds for the Army); and C (5,100 pounds). Each variant is equipped with a companion trailer. Each Service will configure the vehicle for general-purpose mobility, infantry carrier, reconnaissance, heavy guns carrier, anti-tank guided-missile carrier, ambulance, and shelter carrier.

Mission

The Army employs truck systems as multi-purpose transportation and unit mobility vehicles in maneuver, maneuver support, and



ECV2



HEMTT



M915A5

sustainment units. The threat to tactical wheeled vehicles has increased, which has created a need for augmented and flexible mission-based ballistic protection.

- The Army issues HEMTT to distribution companies and general supply sections of forward support companies of brigade support battalions. These companies deploy units to a new theater of operations, relocate units to new operating sites, establish unit areas of operations, provide supply and transport support, defend assigned areas, and redeploy units to home station.
- The M915A5 is a tractor truck used primarily in active and reserve component transportation units for the rapid transport of bulk and containerized supplies from ocean ports to division support areas within a theater of operation.

Prime Contractors

- AM General
- BAE Systems
- Oshkosh

ARMY PROGRAMS

Activity

- In FY08, the Army conducted the following live fire testing:
 - All the truck programs are taking a common building block approach to live fire testing. It begins with ballistically characterizing the armor solutions, followed by a series of exploitation shots against the base armor and armor protection kits of prototype cabs. The focus is on armor and door seams, windows, latches, and seals using small arms threats. Final testing includes full-up and system-level tests against production vehicles using realistic threats such as mines, IEDs, explosively formed penetrators, and rocket-propelled grenades.
 - The Army completed HEMTT full-up and system-level tests at Aberdeen Test Center, Maryland, in FY08.
 - Since the PLS truck uses the same cab as the HEMTT vehicle, DOT&E will make a live fire evaluation of the PLS based on the testing completed on the HEMTT.
 - The Army began M915A5 ballistic armor characterization testing in September 2008.
- In FY08, the Army conducted the following operational testing:
 - The Army conducted a follow-on operational test of the armored cab-equipped HEMTT light equipment tractor and load handling system variant at Fort Campbell, Kentucky, from October 9 to November 2, 2007.
 - The Aberdeen Test Center conducted ongoing Production Verification Testing of the HEMTT at various locations from June 2006 to August 2008.

Assessment

- During FOT&E, the HEMTT did not meet its reliability or maintainability requirements, which negatively impacted HEMTT mission success since the system was often unavailable due to repairs. The HEMTT scheduled maintenance burden is a function of the base vehicle, not the added armor.
- HEMTT provides armor protection to the crews against the likely threats while still maintaining mission capability.
- Live fire system-level testing of the HEMTT truck revealed vulnerabilities in the floor of the cab. As the PLS cab is identical to the HEMTT cab, the same vulnerabilities exist.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY08 Recommendations.
 1. The Army should incorporate both live fire and opposed force-on-force events in future operational testing.
 2. The program managers of the HEMTT and PLS should consider strengthening the floor armor of their cabs.
 3. Additional live fire testing will be required if armor upgrades or design changes are developed for any of the currently tested vehicles.