# Family of Medium Tactical Vehicles A2 (FMTV A2)



In October 2023, DOT&E issued a combined FOT&E and LFT&E report. The report states that units equipped with the Family of Medium Tactical Vehicles A2 (FMTV A2) Light Medium Tactical Vehicle (LMTV) cargo truck, the Medium Tactical Vehicle (MTV) cargo truck, the MTV Load Handling System (LHS) truck, the MTV wrecker, and the MTV dump truck are operationally effective, suitable, and survivable. The improved mobility of the FMTV A2 on secondary and unimproved roads and cross-country terrain, as well as its ability to carry heavier cargo loads, facilitates the Army's operational concept for more dispersed operations on the battlefield, which requires more frequent unit relocations and greater resupply distances.

## SYSTEM DESCRIPTION

The FMTV transports a wide variety of cargo, such as containers, pallets, flat racks, general supplies, personnel, and equipment to and within tactical units, as well as resupply to forward areas. FMTVs are designed to operate worldwide on primary and secondary roads, trails, and cross-country terrain of all surface types in all weather conditions. During peacetime operations, the FMTV A2 is required to operate primarily on highways, consistent with commercial practices for trucks in this payload range.

FMTV variants are based on two common chassis with varied payloads and mission equipment. The trucks can be produced with or without the armored cab and operated with or without an underbody armor protection kit. Additional kits include a materiel handling crane and a self-recovery winch. The following variants are available on each FMTV chassis:

- LMTV chassis a 3-ton cargo truck, a 2.5-ton van, and a lowvelocity air drop (LVAD) cargo truck.
- MTV chassis an 8-ton cargo truck, an 8-ton cargo truck with an extended cargo bed, a tractor, an 8-ton LVAD cargo truck, an expansible van, a 5-ton LVAD dump truck, a wrecker, an 8.8-ton load handling system (LHS) truck, and a 10-ton dump truck.

The Army further modifies these standard variants for specific missions. Currently, air defense units will use modified MTV cargo trucks to carry equipment for the Sentinel Radar and the Army Integrated Air and Missile Defense (AIAMD) system. Earlier models of the FMTV were adapted to carry the Medium Extended Air Defense Systems and the High-Mobility Artillery Rocket System.

The FMTV A2 also includes three types of companion FMTV trailers: an LMTV trailer, an MTV trailer, and an LHS trailer. The FMTV trailers were not redesigned or modified for use with the FMTV A2. The MTV tractor pulls all standard Army semi-trailers up to the 40ton class, including the low-bed construction equipment transport, flat-bed cargo, and fuel tank semitrailers.

FMTV A2 are an integration of commercially based components and a continuation of the same capabilities and interfaces available with the existing FMTV fleet. The design incorporates a set of hardware and software improvements, upgrades to expand truck capabilities, and includes:

- Increased cargo-carrying capacity. Earlier models of the LMTV and MTV trucks carried a maximum cargo load of 2.5 and 5 tons, respectively.
- Improved mobility from increased engine horsepower, an adjustable suspension system, and higher wheel capacity.
- Upgraded vehicle data bus with a simplified electrical

system that supports improved diagnostic and troubleshooting capabilities and future upgrades.

- Increased electrical power capacity to support current operations and provide growth potential for future upgrades.
- Enhanced vehicle safety with Electronic Stability Control incorporated into the anti-lock braking system.
- Augmented crew survivability with the armor protection of the FMTV A1P2 and a new underbody armor protection kit.

### MISSION

The Army employs the FMTV to provide multi-purpose transportation and mobility in maneuver, maneuver support, and sustainment units. Transportation and supply units conduct line and local haul missions carrying cargo, soldiers, and equipment with the LMTV and MTV cargo trucks and their associated LMTV and MTV trailers. Medical units employ the MTV LHS and FMTV LHS trailer to transport, load, and off-load shipping containers with unit equipment. Maintenance units use the MTV wrecker to recover all immobile light- and mediumwheeled vehicles, including all FMTV variants. Engineering units employ the MTV dump truck to haul and dump construction material during guarry operations. All vehicles tested during the FOT&E and LFT&E were equipped with an armored crew cab and the underbody armor protection kit.

## PROGRAM

The FMTV is an Acquisition Category IC program. DOT&E approved the Army's operational test plan for the FOT&E in March 2023 and published a combined FOT&E and LFT&E report in October 2023, assessing its operational effectiveness, suitability, and survivability. Testing was conducted to support a full-rate production decision in 1QFY25.

The Army will initially procure 1,894 FMTV A2s through FY27. Although the exact quantities of each variant are still being determined by the Army, the LMTV and MTV cargo trucks are the FMTV A2 variants expected to be procured in the greatest quantities.

#### » MAJOR CONTRACTOR

 Oshkosh Defense, LLC – Oshkosh, Wisconsin

## TEST ADEQUACY

The U.S. Army Test and Evaluation Command conducted FOT&E from March through April 2023 at Fort Bliss, Texas and LFT&E was conducted from August 2019 through July 2022 at Aberdeen Proving Ground, Maryland in accordance with DOT&E-approved test plans. DOT&E observed these tests, which were adequate to assess the operational effectiveness, suitability, and survivability. Five of the 17 FMTV A2 variants were included in the FOT&E: the LMTV cargo truck, the MTV cargo truck, the MTV LHS truck, the MTV wrecker, and the MTV 10ton dump truck. These vehicles were operated by soldiers with and without their associated trailers and carried varying cargo loads from empty to the maximum allowable weight. The Army selected these vehicles, with DOT&E's concurrence, based on their planned procurement guantities, unit missions, and load carrying capabilities. During the FOT&E, the unit conducted line and local haul supply, recovery, and guarry missions using these FMTV A2 trucks with armored crew cabs and underbody armor protection kits.

## PERFORMANCE

#### » EFFECTIVENESS

The FMTV A2 is operationally effective when executing its primary local haul missions within the Division and Brigade Area of Operations in accordance with its expected operating scenarios and profiles. The unit equipped with the FMTV A2 successfully completed 87 percent of its unit local haul resupply (cargo), recovery, and quarry missions during the FOT&E. The FMTV A2 did not contribute to any mission failures during the FOT&E. The FMTV A2 demonstrated increased mobility and speeds over secondary roads and cross-country terrain typically found in forward areas compared to earlier models of the FMTV.

The Army did not upgrade its FMTV trailers. The current FMTV trailers became mired during several off-road missions, particularly the LHS trailer. These incidents delayed the delivery of cargo to the supported units.

FMTV A2 effectiveness is reduced during highway missions because the MTV LHS truck, when carrying a full cargo load, was unable to maintain minimum highway speeds (typically 40 miles per hour) on slopes above a two percent grade. This decreased overall unit mobility while operating in a convoy on highways.

#### » SUITABILITY

The FMTV A2 is operationally suitable for its expected mission scenarios and profiles. The FOT&E was not scoped to determine if the FMTV A2 met its reliability requirements. The five variants tested during the FOT&E did demonstrate the required operational availability and maintainability for the unit to execute its assigned missions. Soldier maintenance times for the LMTV cargo truck and MTV LHS truck met the maintenance ratio requirement, but it was not met for the other variants.

During the FOT&E, crews of five vehicles reported seven instances when the fuel level gauge caused them to mistakenly believe they were low on fuel, thus creating uncertainty in their ability to complete their assigned mission. As a result, crews stowed additional 5-gallon fuel cans on their vehicles to refuel them during missions, which added weight and introduced an unnecessary vulnerability and hazard. The lack in interior storage space inside the cab made it difficult for soldiers to stow their equipment and supplies needed for missions. The middle seat configuration for the gunner limited visibility and caused discomfort of the neck and back strain when the gunner's hatch was closed. Soldiers had difficulty opening and closing the cab doors, even on level terrain, due to their weight and forward-opening design.

#### » SURVIVABILITY

The FMTV A2 is survivable to the cyber and live fire threats encountered during operations. The armored cab protected the crew from all required threats and some objective-level threats, but there is a risk of blunt force trauma to soldiers from secondary hazards inside the crew cab. The design of the FMTV A2 provided protection against enacted cyberattacks which do not require physical access to the vehicle. A successful cyberattack requires physical access or compromise of the contractor supply chain.

#### RECOMMENDATIONS

The Army should:

- Add a door assist to the crew cab doors to alleviate usability concerns observed during the FOT&E.
- 2. Verify the accuracy of the fuel level sender assemblies to ensure crews can determine

if they need to refuel their vehicles during missions.

- Develop operating procedures to reduce the weight of cargo loads when traveling on highways to maintain convoy speeds and decrease the likelihood of miring during operations on unimproved roads and traveling crosscountry.
- Field a more robust trailer with improved off-road mobility for the MTV LHS truck, the MTV cargo truck, and the LMTV cargo truck.
- Eliminate secondary hazards in the cab to reduce the likelihood of crew injuries during missions.

