

## Army Tactical Wheeled Vehicles



**FMTV**  
(Family of Medium Tactical Vehicles)



**JLTV**  
(Joint Light Tactical Vehicle)  
Close Combat Weapons carrier



**JLTV**  
(Joint Light Tactical Vehicle)  
General Purpose



**JLTV**  
(Joint Light Tactical Vehicle)  
Utility/M119A3 Howitzer



**JLTV**  
(Joint Light Tactical Vehicle)  
Heavy Guns Carrier

### Executive Summary

- The Family of Medium Tactical Vehicles (FMTV) A2 variants have demonstrated poor reliability and degraded vehicle functionality in developmental testing. The program has taken extensive actions to require the vendor to conduct failure analysis and perform corrective actions to improve the FMTV A2 reliability.
- The Joint Light Tactical Vehicle (JLTV) program canceled the May 2020 developmental test with soldiers due to the coronavirus (COVID-19) pandemic and soldier availability during the pandemic. The purpose of the testing was to provide soldiers' assessment of the command, control, and communication capability of the Mounted Family of Computer

Systems (MFoCS) integrated on the JLTV. DOT&E plans to assess the MFoCS capabilities during the August 2021 JLTV developmental/operational testing (DT/OT).

### System

#### FMTV

- The FMTV A1P2 Underbody Armor Kit (UAK) is a survivability upgrade to the currently fielded FMTV A1.
- The FMTV A2 is a set of hardware and software improvements to the FMTV A1 trucks designed to expand the capabilities of the FMTV. These upgrades include: adjustable suspension system, increased payload, improved

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ride quality, electronic stability control, and an underbody protection kit.

- The FMTV A2 Family of Vehicles (FoV) consists of the following light and medium variants that operate on- and off-road.
  - The Light Medium Tactical Vehicle (LMTV) transports a 6,000-pound payload and a 12,000-pound towed load.
  - The Medium Tactical Vehicle (MTV) transports a 16,000-pound payload and a 21,000-pound towed load.

## JLTV

- The JLTV FoV is the partial replacement for the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet for the Army, Marine Corps, and Air Force. The Services intend the JLTV to provide increased crew protection against IEDs and underbody attacks, improved mobility, and higher reliability than the HMMWV.
- The JLTV FoV consists of two mission categories: the JLTV Combat Tactical Vehicle, designed to seat four passengers, and the JLTV Combat Support Vehicle, designed to seat two passengers.
- The JLTV Combat Tactical Vehicle has a 3,500-pound payload and three mission package configurations:
  - General Purpose Variant
  - Heavy Guns Carrier Variant
  - Close Combat Weapon Carrier Variant
- The JLTV Combat Support Vehicle has a 5,100-pound payload and one mission package configuration:
  - Utility (UTIL) Prime Mover Variant that can accept a Troop Seat Kit to carry up to eight soldiers or a cargo shelter

## Mission

### FMTV

- The Army employs the FMTV FoV to provide multi-purpose transportation in maneuver, maneuver support, and sustainment units. Transportation units conduct line and local haul missions carrying cargo and soldiers with the LMTV and MTV Cargo variants and associated trailers. Medical units employ the MTV – Load Handling System to transport, load, and off-load medical containers. Maintenance units use the MTV wrecker to conduct recovery operations of light- and medium-wheeled vehicles. Engineering units employ the MTV Dump Truck to haul and dump material.

### JLTV

- Army and Marine Commanders employ units equipped with JLTV as a tactical-wheeled vehicle to support all types of military operations. Airborne, air assault, amphibious, light, Stryker, and heavy forces use JLTVs as reconnaissance, maneuver, and maneuver sustainment platforms. Air Force units intend to employ JLTVs for security and special operations.
- Small ground combat units will employ JLTV in combat patrols, raids, long-range reconnaissance, and convoy escort.

## Major Contractors

### FMTV

- Oshkosh Corporation – Oshkosh, Wisconsin

### JLTV

- Oshkosh Corporation – Oshkosh, Wisconsin

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## Activity

### FMTV

- In FY20, the program developed the FMTV A2 Test and Evaluation Master Plan (TEMP) Annex to outline the Production Verification Test (PVT) and FOT&E for the FMTV A2 FoV. The program plans to submit the FMTV A2 TEMP Annex for DOT&E approval in 3QFY21.
- In December 2019, the Army completed the FMTV A2 LFT&E program. LFT&E for FMTV A1P2 was delayed due to COVID-19 restrictions to access test facilities. Testing resumed in August 2020 and will be completed in 1QFY21. DOT&E will publish a combined LFT&E report detailing the survivability of both the FMTV A2 and FMTV A1P2 in 2QFY21. The Army executed the LFT&E in accordance with DOT&E-approved test plans.
- The Army Test and Evaluation Command (ATEC) plans to conduct the FMTV A2 FOT&E during 2QFY22.

### JLTV

- In FY20, ATEC executed the JLTV A1 Production Verification Testing (PVT) at Aberdeen Proving Ground, Maryland, and Yuma Proving Ground, Arizona.

- The program canceled the May 2020 developmental test with soldiers due to COVID-19 and soldier availability during the pandemic. The purpose of the testing was to obtain soldiers' assessment of the command, control, and communication capability of the MFOCS integrated on the JLTV.
- Fielding of JLTVs to several Army units was delayed approximately 3 to 7 months due to COVID-19.
- In August 2020, the program conducted a Soldier Touchpoint event at Fort Polk, Louisiana, to inform the design and production of the JLTV Fire Direction Center (FDC) Integration Kit and M119A3 Howitzer interface. ATEC plans to conduct DT/OT of this artillery integration in August 2021 at Fort Campbell, Kentucky.
- The program plans to conduct the JLTV Close Combat Weapon Carrier Soldier Touchpoint event at Fort Benning, Georgia, in January 2021, to demonstrate fixes to the vehicle with respect to firing tube-launched, optically tracked, wireless-guided (TOW)/Saber weapons from the rear of vehicle, missile rack configuration, and missile

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reloads. These fixes address findings from the 2018 JLTV Multi-Service Operational Test and Evaluation and developmental testing.

## Assessment

### FMTV

- The FMTV A2 variants have demonstrated poor reliability and degraded vehicle functionality based on developmental testing. The variants experienced several failure modes during reliability testing: suspension leveling and sway bar, coolant and engine leaks, sensor and hydraulic systems, Drive Display Unit and sensors, and stuck doors.
- In FY20, the program required the vendor to conduct failure analysis and perform corrective actions to improve the FMTV A2 reliability. The FMTV A2 may require a reliability growth program and necessitate a redesign in order to meet variant reliability requirements. The Army may need to reassess the FMTV A2 required reliability without a successful reliability growth plan and potential design modifications.
- Preliminary assessments indicate that the FMTV A2 is meeting its survivability requirements.
- The survivability assessment of the FMTV A1P2 is ongoing and the initial analyses demonstrated the expected performance of the underbody kit.
- The Army delayed the FMTV A2 FOT&E by 6 months due to performance and reliability failures demonstrated during developmental testing. This delay may not provide sufficient time for the program to fix FMTV A2 failures, complete performance testing, and verify the FMTV A2 variants met reliability requirements prior to the FOT&E.

### JLTV

- The JLTV A1 exceeded its reliability requirement of 2,400 mean miles between operational mission failures during the 36,000-mile production verification testing (PVT). Oshkosh Field Service Representatives (FSRs) performed maintenance demonstrating a mean time to repair (MTTR) of approximately 0.69 hours. This maintainability time

is an improvement over the 1-hour average time to repair demonstrated during the last phase of developmental testing. The JLTV has not met its MTTR requirement of 0.5 hours for field level maintenance tasks performed by the military maintainer.

- The PVT confirmed the improvements to reduction in the external vehicle noise with the addition of a muffler, upgraded alternator, and isolators. The integration of new gears provided marginal improvement to external vehicle noise.
- During the Soldier Touchpoint event, field artillery soldiers assessed the JLTV UTIL FDC Kit and the interface as the M119A3 prime mover. The event did not include soldiers using the FDC to execute notional fire missions from the FDC to the M119A3. The program plans to address soldier recommended modifications to the JLTV UTIL prior to the JLTV DT/OT.
  - The JLTV UTIL had sufficient ammo carry capability and good ride quality while on the move.
  - Placement of mission equipment to improve storage and use by soldiers.
  - Compared to the HMMWV's tailgate, soldiers assessed the JLTV tailgate as deficient for use as a ready rack for projectiles and fuses in preparation for firing due to its smaller dimensions and light weight.
  - Relocate the power cable between the JLTV and the Howitzer to the same side of the vehicle as the HMMWV to avoid the cable interfering with crew tasks.

## Recommendations

1. The FMTV program should develop a plan to correct and verify fixes to failures discovered during performance and reliability testing to the FMTV variants restarting developmental testing prior to the FOT&E.
2. The Army should assess the command, control, and communication capability of the JLTV integrated with the MFoCS during the August 2021 DT/OT.

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