

Joint Light Tactical Vehicle (JLTV) Family of Vehicles (FoV)

Executive Summary

- The Army Systems Acquisition Review Council (ASARC) Full-Rate Production (FRP) decision for the Joint Light Tactical Vehicles (JLTV) program is planned for December 2018.
- DOT&E submitted the JLTV Multi-Service Operational Test and Evaluation (MOT&E) report and classified LFT&E annex to Congress in October 2018.
- The JLTV General Purpose (GP), Heavy Guns Carrier (HGC), and Utility (UTL) variants are operationally effective for employment in combat and tactical missions.
- The JLTV Close Combat Weapons Carrier (CCWC) is not operationally effective for use in combat and tactical missions. The CCWC provides less capability to engage threats with the Tube-launched, Optically tracked, Wire-guided (TOW) missiles over the fielded High Mobility Multipurpose Wheeled Vehicle (HMMWV). The missile reload process is slow and difficult for crews.
- All JLTVs are not operationally suitable because of deficiencies in reliability, maintainability, training, manuals, crew situational awareness, and safety.
- JLTVs are survivable providing crew survivability against threshold and some objective threats required by the Capabilities Production Document and other limited threats that U.S. forces would likely encounter during future conflicts.



General Purpose



Heavy Guns Carrier



Utility/Shelter Carrier



Close Combat Weapons Carrier

System

- The JLTV Family of Vehicles (FoV) is the partial replacement for the HMMWV fleet for the Marine Corps and Army. The Services intend 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 (GP) Variant
 - Heavy Guns Carrier (HGC) Variant
 - Close Combat Weapon Carrier (CCWC) Variant
- The JLTV Combat Support Vehicle has a 5,100-pound payload and one mission package configuration:
 - Utility (UTL) Prime Mover Variant that can accept a shelter
- As a result of General Motor's decision to discontinue the JLTV engine used during Engineering and Manufacturing Development, the JLTV program plans to field two vehicle versions: the JLTV A0 and A1. The JLTV A1 has a new Duramax engine that replaces the A0 engine.
- The program plans to procure approximately 49,099 vehicles for the Army, 9,091 vehicles for the Marines, and 80 vehicles for the Air Force.
- JLTVs are equipped with two armor levels: the A-structure, or base vehicle, which the Services intend to employ in low-threat environments, and the B-kit, an add-on armor kit,

FY18 ARMY PROGRAMS

for additional force protection against enhanced small arms, fragmentation, and underbody threats.

Mission

- Commanders employ military units equipped with JLTV as a light, 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 Contractor

Oshkosh Corporation – Oshkosh, Wisconsin

Activity

- The Army Test and Evaluation Command (ATEC) completed the majority of Production Qualification Testing (PQT) and Reliability Qualification Testing (RQT) on the JLTV A1 by March 2018. The purpose of PQT was to ensure that the JLTV performance, reliability, weapons integration, and transportability met the requirements outlined in the JLTV Capabilities Production Document.
- RQT at Aberdeen Proving Ground (APG), Maryland, and Yuma Proving Ground (YPG), Arizona, accumulated over 32,000 combined miles to assess the A1 vehicle reliability.
- Transportability certification testing is ongoing at APG and Airborne Operational Test Directorate, Fort Bragg, North Carolina. The testing consists of strategic, internal and external air, and rail transport for transportability certification. ATEC completed the rail transportability testing in October 2018.
- In December 2017, the program conducted the JLTV Maritime Prepositioned Force Shipboard Evaluation at Charleston, South Carolina. This assessment provided the program with information regarding the capability to embark, stow, maneuver, and disembark from decks on Maritime Sealift Command vessels.
- Low Velocity Air Drop Testing is ongoing at Fort Bragg, North Carolina. The testing is planned to be completed by April 2019.
- ATEC and the Marine Corps Operational Test and Evaluation Activity (MCOTEA) conducted the JLTV MOT&E at 29 Palms and Camp Pendleton, California, from February through April 2018 in accordance with the DOT&E-approved test plan. The Marine test unit completed two 96-hour major combat scenarios and the Army test unit completed one 96-hour major combat scenario and one 168-hour wide area security scenario.
- In December 2017, ATEC and MCOTEA completed the LFT&E program at APG in accordance with the DOT&E-approved test plan:
 - Full-up system-level live fire testing evaluated crew survivability and vehicle performance against mine and IED threats, overhead artillery, rocket-propelled grenades, and homemade explosives.
 - Ballistic cab testing characterized the explosively formed penetrator armor kit.
 - Exploitation testing evaluated the survivability of the JLTV against small arms and fragment simulating projectiles.
- Fire survivability testing was performed to determine if the Automatic Fire Extinguisher System (AFES) could detect and extinguish fires without injuring the crew with toxic gases or excess extinguishing agent.
- In October 2018, DOT&E submitted the JLTV MOT&E Report and classified LFT&E annex to Congress to support the ASARC JLTV FRP decision.
- The JLTV Program Office completed the JLTV FRP Test and Evaluation Master Plan (TEMP) Annex in October 2019 to support Engineering Change Proposals and correction of vehicle deficiencies based on performance demonstrated in the MOT&E and developmental testing. The Army did not submit the JLTV TEMP Annex for OSD approval prior to FRP.
- The JLTV FRP decision is planned for December 2018.
- MCOTEA plans to observe and collect data on the JLTVs integrated into Marine Expeditionary Unit operations during pre-deployment training with the first JLTV-equipped unit in the fourth quarter of 2019 and first quarter 2020.
- The program plans to implement corrective actions to the CCWC field of fire to meet user TOW fire threshold requirements and investigate solutions to improve missile reload prior to fielding to Army and Marine units.
- The program intends to increase the duration of training, revise maintenance course content and documentation, and augment unit maintainers with on-site field service representatives as part of JLTV fielding.

Assessment

- Based on the MOT&E and the DOT&E 2014 Operational Assessment, the JLTV GP, HGC, and UTL variants are operationally effective for their employment in combat and tactical missions. The Army and Marine Corps units equipped with the JLTVs accomplished 17 of 24 major combat and wide-area security missions successfully employing the JLTVs. The majority of unsuccessful missions were attributed to combat losses. The single non-successful mission attributed to the JLTV was due to reliability failures.
- All JLTVs provide sufficient protected tactical mobility, are capable of negotiating complex terrain, and have the agility to react to changing tactical situations. The vehicles have the necessary command, control, and communications capabilities to support tactical decision-making. The HGC can deliver lethal and suppressive fires against the enemy.

FY18 ARMY PROGRAMS

- The JLTV towing the fielded M1102H trailer is not operationally effective for combat missions. The trailer has less mobility than the JLTV, which slowed the operational tempo of the test units. The Army has made no decision to procure the JLTV companion trailer.
- A unit equipped with JLTVs can sustain itself for 24 hours.
- The JLTV has large visual and loud aural signature increasing detectability.
- The CCWC is not operationally effective for employment in combat and tactical missions. The CCWC provides less capability to engage threats with the TOW missiles over the fielded HMMWV. The missile reload process is slow and difficult for crews. The CCWC has less storage space than other JLTV variants and accessing mission-essential equipment from the cargo area is a challenge.
- Marine Corps units can accomplish shore-to-shore amphibious operations on a non-contested beach.
- Marine Corps units can accomplish air assault missions with JLTVs with B-kit armor providing protected maneuver capability to counter threat activities at the landing zone.
- Army units equipped with JLTV can accomplish air assault missions with B-kit armor removed. JLTVs with B-kit armor installed exceed the vehicle gross weight limit of the external lift capability of the CH-47F helicopter.
- All JLTVs are not operationally suitable because of deficiencies in reliability, maintainability, training, manuals, crew situational awareness, and safety. JLTVs demonstrated less reliability than its requirement. The primary drivers of operational mission failures were engine wiring problems, flat and damaged tires, and break system faults.
- Units cannot maintain the JLTV without support from the contractor field service representatives due to vehicle complexity, ineffective training, poor manuals, and challenges with troubleshooting the vehicle. The JLTV will require more maintenance than the HMMWV based on the maintenance ratio demonstrated in the MOT&E.
- The health monitoring system is not accurate and reduces crew and maintainer confidence in the system.
- The maintainer training was not effective and required additional familiarization and hands-on time to increase the competency of military maintainers to troubleshoot the vehicle.
- Technical manuals were not useful because instructions were not detailed, incorrect, and lacked steps to troubleshoot problems.
- Crew has poor visibility due to blind spots around the vehicle.
- Crews had slow egress from JLTVs and numerous reliability failures of doors not opening impeded the ability of the soldiers and marines to safely ingress and egress the JLTV.
- Fewer JLTVs can fit on Maritime Prepositioned Force ships than HMMWVs. Ship load planners will need to reconfigure loads to store required amount of JLTVs.
- The JLTV provides force protection against threshold and some objective threats required by the Capabilities Production Document that U.S. forces would likely encounter during future conflicts.
- The AFES extinguished all fires without causing any toxic-gas induced crew injuries.

Recommendation

1. The program should develop a plan to address the recommendations identified in the DOT&E MOT&E Report and LFT&E classified annex.

FY18 ARMY PROGRAMS