



BAE Systems' JLTV design incorporates lessons learned from DOD's Mine Resistant Ambush Protected vehicle program and features the latest in lightweight, advanced armor and a V-shaped hull design to provide maximum crew protection. (Photo by BAE Systems.)

Joint Light Tactical Vehicle (JLTV) Technology Development (TD) Phase Vehicles Delivered on Schedule, Competitive Prototyping Proves Fruitful

Ashley John

The Army and U.S. Marine Corps (USMC) have taken delivery of TD phase vehicles, seven from each TD phase contractor, marking the beginning of a 12-month test and evaluation effort at Aberdeen Proving Ground (APG), MD, and Yuma Proving Ground (YPG), AZ. The services are currently executing a 27-month TD phase wherein armor coupons, ballistic hulls, vehicles, and trailers will be developed and undergo a series of performance and reliability testing that will include assessments from joint warfighters. "JLTV has taken the traditional TD phase testing and expanded it to focus more on system-level testing rather than the traditional component-level testing," stated COL John S. Myers, the Army's Project Manager Joint Combat Support Systems.

“Rather than following a traditional TD test program, the JLTV program has adopted a more comprehensive approach. The JLTV approach will enable the services to gauge technical potential against JLTV key performance parameters, placing emphasis on modeling and simulation, systems component testing, risk reduction, and increased readiness for the Engineering and Manufacturing Development [EMD] phase,” added LTC Wolfgang Petermann, the Army’s Product Manager JLTV.

The expanded JLTV TD will include more emphasis on system evaluation, system performance testing (rather than component testing), reliability testing, ballistic testing (coupons, ballistic hulls, prototypes), limited transportability demonstrations using operational assets, and early warfighter evaluations.

Vehicles will undergo performance and ballistic testing at APG and reliability and maintainability testing at YPG. Once performance testing is complete on JLTV Category A, B, and C vehicles at APG, the vehicles will be subjected to a limited user test with Soldiers and Marines, running the vehicles through a series of vignettes and soliciting feedback from the user jury. Both JLTV Category A and B vehicles with full

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B-kit configurations will run at YPG for the entire test duration.

The Australian vehicles are scheduled for delivery during June–July 2010 and will concurrently undergo testing with the U.S. vehicles, enhancing global interoperability between the U.S. and Australian forces. The Australian vehicles feature right-hand operation; commonality with the left-hand operation vehicles is around 95 percent for all three TD contractors. Different design approaches among the three TD contractors have shown no weight increase for one contractor, as they have only modified existing parts without adding parts. The two other TD contractors have added parts, which resulted in a 20-pound weight increase for one contractor and a 40-pound weight increase for the other.

JLTV TD contractors will also deliver one ballistic hull and vehicle prototype with enhanced protection, called JLTV-A Enhanced Protection (EP),

during the TD phase. This vehicle modification will increase the inherent protection requirements originally required for the JLTV Category A General Purpose vehicle by improving its side and underbody protection capabilities. The Essential Combat Configuration weight requirement for the JLTV-A EP modification is 15,300 pounds. The government will take delivery of the JLTV-A EP vehicle in October 2010.

Rebalancing the Future of the LTV Fleet

Developing the JLTV reinforces the Army’s approach to interoperable platforms that provide expeditionary and protected maneuver to forces currently supported by high-mobility multi-purpose wheeled vehicles. The intent of the JLTV is to facilitate brigade combat teams’ (BCTs’) symmetric and asymmetric approaches to tactical and operational maneuvers by improving their versatility and agility. The JLTVs also improve payload efficiency through chassis engineering, enabling the vehicles to be deployed with the appropriate amount of force protection through scalable armor solutions.

The capability gaps within the existing light tactical wheeled vehicle fleet are the result of an imbalance in protection, payload, and performance. The JLTV Family of Vehicles (FOV) will be able to deliver all of these capabilities within a transportable and expeditionary vehicle, meeting the Army and USMC rotary- and fixed-wing air, sea, and overland transport requirements—something no existing light tactical wheeled vehicle can do. “The JLTV FOV is expected to achieve



General Tactical Vehicles’ (GTVs) vehicle design provides an armored crew capsule with a V-shaped hull for protection against mines and improvised explosive devices, high-performance and off-road mobility, and deployability by land, sea, and air. (Photo by GTV.)

unprecedented commonality, which will be crucial in keeping life-cycle costs affordable,” said Myers.

The JLTV program management office fully expects TD phase testing to demonstrate the achievability of purchase description (PD) requirements, as well as the technological maturity, integration achievability, and producibility of JLTV vehicles. During TD testing, the Capabilities Development Document and PD will be revised almost exclusively upon the basis of formal test results and/or approved analysis.

Competitive Prototyping is Working

The TD phase is satisfying the intended purpose: to demonstrate the integration of mature technologies as a complete system, providing an assessment of the technical and performance risks relevant to entering the EMD phase. The TD phase will establish an achievable set of requirements for the JLTV program. “Based on the valuable information we have gained thus far, we are making adjustments to ensure the EMD phase is low risk and affordable for the services,” Petermann said.

All three JLTV TD phase contractors delivered vehicles in accordance with contract schedules and within the original contract amounts. JLTV program execution has demonstrated that DOD’s competitive prototyping policy is working, contributing to the program manager’s ability to control cost, schedule, and performance. “Competitive prototyping has enabled JLTV to stay within our cost requirements. The government cost is not overrun and we are operating within our schedule and performance parameters,” said Petermann.

“The process increases government leverage and we can see the results being driven by real data on actual hardware,” said Kevin Fahey, Program Executive Officer Combat Support and



JLTV is an FOV with companion trailers, as shown here by Lockheed Martin, one of the three TD phase contractors. JLTV will provide warfighters with a balanced solution—protection, performance, and payload—packaged in a transportable and expeditious solution. (Photo courtesy of Lockheed Martin.)

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Combat Service Support (CS&CSS). “This will provide the government with increased confidence in operational performance of the JLTV FOV through test and evaluation of actual performance capabilities over the next 12 months.” Additionally, detailed cost information gathered during the TD phase is enabling the JLTV program management office to develop detailed cost estimates with greater confidence, reducing risk associated with affordability as we proceed to the EMD phase.

Following the TD phase, the services intend to conduct another full and open competition for the EMD phase, with Milestone B decision planned for the end of FY11. The EMD phase will focus on reducing program risk;

ensuring operational supportability; designing for producibility; maximizing affordability; ensuring critical program information protection; and demonstrating system integration, interoperability, transportability, fuel efficiency, reliability, and utility. “The government anticipates full and open competition with award of two contracts for the EMD phase, which will last for 24 months,” added Petermann. A Milestone C decision is planned for FY14 and full production and fielding is anticipated to start in 2015.

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