Land Warfare Platforms: Logistics, Support & Unmanned - Joint Light Tactical Vehicle (JLTV)

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The Joint Light Tactical Vehicle (JLTV) is a US DoD programme that is valued at a potential USD53.3 billion by the US Government Accountability Office (GAO). The JLTV reached contract award status during the fourth quarter of 2015, and in service will replace a percentage of the current AM General High-Mobility Multipurpose Wheeled Vehicle (HMMWV/Humvee) fleet. The JLTV is based on Oshkosh's light combat tactical ATV (L-ATV), details of which can be found elsewhere in this section.

The JLTV requirement traces back to 2005 but publicly emerged in January 2006 with an early government RFI noting, "In response to an operational need and an ageing fleet of light tactical

wheeled vehicles, the joint services have developed a requirement for a new tactical wheeled vehicle platform that will provide increased force protection, survivability, and improved capacity compared with the current up-armoured HMMWV while balancing mobility and transportability requirements with total ownership costs." The joint service nature of the effort was assured through congressional language in the FY 2006 Authorization Act, which mandated that any future tactical wheeled vehicle programme would be a joint programme.

Some of the earliest JLTV-related developments included the Office of Naval Research (ONR) awarding USD500,000 contracts to AM General, General Dynamics Land Systems (GDLS), BAE Systems, Oshkosh Truck Corp, and Textron Systems in August 2006 for the design of preliminary JLTV mock-ups. Separately, GDLS and AM General were awarded JLTV 'Best Technical Approach' trade studies by the ONR.

In November 2006, the joint chief of staff's Joint Requirement Oversight Council (JROC) approved the JLTV requirement. That action began a 13-month Concept Refinement phase. The Concept Refinement phase is a pre-systems acquisition process designed to further develop the initial concepts from the initial capabilities document (ICD) and also includes an analysis of alternatives.

Given the potential value of the JLTV programme, it was perhaps inevitable that even before any RFPs or finalised requirements, some industry teams began posturing and moving forward with JLTV concepts.

In October 2006, Lockheed Martin announced that it was teaming with Armor Holdings to compete for JLTV. Lockheed Martin stated that it would act as the prime contractor and systems integrator, providing the vehicle design, network-centric capabilities, and logistics. Armor Holdings would primarily be responsible for vehicle assembly and would lead the design and manufacture of the armour survivability sub-systems. At the Association of the United States Army (AUSA) Winter Symposium held in March 2007, Lockheed Martin unveiled a full-sized model of its JLTV Combat Tactical Vehicle (CTV) variant.

In April 2007, it was reported that the military was aiming to accelerate JLTV and that the services wanted a two-year system design and development (SDD) phase depending on what industry could deliver. Under that plan, the first vehicles would potentially be delivered as early as FY 2010. As part of that effort, the army was already experimenting with several prototypes in military user assessments in Fort Lewis, Washington. According to the US Army Tank-Automotive and Armaments Command (TACOM), three companies - International Military and Government, Lockheed Martin, and Armor Holdings - had provided experimental hulls, including FTTS Utility Vehicle (UV) and Manoeuvre Sustainment Vehicle (MSV) prototypes.

At that time, industry sources who spoke to *Jane's* said that following a draft solicitation that was expected on 29 April 2007, they expected a formal JLTV RFP in June or July. It was also disclosed that while the requirements had yet to be finalised, the services anticipated buying as many as 40,000 JLTVs in the first stage of the programme.

At the successful conclusion of the Concept Refinement phase in December 2007, the Joint Program Office JLTV project manager intended to transition the programme directly into the EMD phase. However, as the calendar date for the milestone approached, it became clear that the

Milestone Decision Authority (MDA) Defense Acquisition Executive (DAE), John Young, would not support the JLTV programme entering into the acquisition process at that time. He denied the request and instructed the army and the USMC to develop a more vigorous technology development (TD) phase. Young's concerns were threefold. Firstly, he was not convinced that the technology required was mature enough. Secondly, he believed that requirements were not stabilised, and thirdly, a potential lack of adequate funding still existed.

The US DoD released an RFP for the TD phase of the JLTV programme on 5 February 2008. Industry proposals were due by 7 April 2008, with a desired three TD phase contract awards projected to follow in June 2008, which was later quoted as July. Capability Development Document (CDD) version 2.7a was published for the TD phase in December 2007.

Among other things, JLTV's TD phase was intended to certify system integration on complete vehicles and re-evaluate payload, survivability, and performance requirements. It was also intended to inform the US Army, USMC, and Australian Defence Force when they joined the programme in October 2008, of risks associated with entering the programme's next phase. It was expected that competition would result in multiple contract awards, with each winning vendor subsequently required to deliver seven vehicles and four trailers.

Speaking at the 2008 Tactical Wheeled Vehicles Conference, Brigadier General John Bartley, US Army Program Executive Officer for Combat Support and Combat Service Support (CS & CSS), said the JLTV TD phase would be structured over 27 months. This would comprise 15 months for the design and build of the vehicle systems, followed by approximately one year of testing. Brig Gen Bartley explained that the TD phase was fully funded, but added that it was "a finite resource". As a result, he said the specific number of TD contracts awarded may be affected by the costs of the winning proposals.

At that time, the JLTV programme called for 10 different vehicle configurations in three payload categories: Category A (3,500 pound payload); Category B (4,000-4,500 pound payload); and Category C (5,100 pound payload). Brig Gen Bartley noted that the final category arrangement could change based on the capabilities and flexibility of industry platform designs. "The other key piece is [that] there's a trailer component," he said, explaining that it was to be run alongside the vehicle requirement, since the previous development of the HMMWV trailer independently from the vehicle had led to problems.

On completion of the TD phase, the award of two contracts for the EMD phase were anticipated.

In early July, the US DoD announced it was postponing the award of JLTV TD phase contracts. In order to have sufficient funding for more than two TD phase contracts, the DoD requested to reprogramme USD60 million in FY 2008 funds. On 19 August 2008, the army and USMC announced that they anticipated awarding JLTV TD phase contracts in October 2008.

A CRS report for Congress published on 28 August 2008 suggested that the army estimated that each JLTV would cost USD418,000, almost 70% higher than the target cost of USD250,000 per vehicle that would have enabled the army to replace all of its HMMWVs with JLTVs. The army's then current JLTV requirement was 140,709 vehicles.

On 29 October 2008, 27-month TD phase contracts were awarded to three JLTV teams. BAE Systems Land & Armaments was awarded a USD40.5 million contract, Lockheed Martin received a USD35.9 million contract, while General Tactical Vehicles (GTV) received the final contract, worth USD45 million.

Seven teams had responded to the TD phase RFI released in February 2008. These were:

- Lockheed Martin, teamed with BAE Systems Mobility & Protection Systems (formerly Armor Holdings), Alcoa Defense, and JWF Industries
- BAE Systems, teamed with Navistar and offering Valanx (Northrop Grumman joined this team in April 2011)
- Northrop Grumman and Oshkosh Corporation, offering a design built around a diesel-electric power train
- Raytheon, teamed with Blackwater
- General Dynamics, teamed with AM General as GTV
- Boeing, Textron, and MillenWorks, collaborating on a parallel hybrid design
- DRS Sustainment Systems, teamed with Force Protection.

Up to 10 different mission configurations (sub-configurations) in three payload categories of vehicle remained in the CDD at this stage, with the caveat that final mission configurations and categories were being assessed.

Payload Category A required a payload of 1,588 kg and would be configured as a GP mobility vehicle. Payload Category B would feature the most variants, with a payload of 1,814 kg for the USMC and 2,041 kg for the US Army. It was to be configured in seven versions: infantry carrier army, infantry carrier USMC, reconnaissance, command and control, heavy guns carrier, close combat weapons carrier, utility, and ambulance. Payload Category C would have a payload of 2,313 kg and be configured as a utility vehicle and an ambulance.

The three TD phase teams were each to deliver seven vehicle prototypes in all of the payload configurations - two Category A vehicles, four Category B (two army, one USMC infantry carrier, and a marine C2OTM variant), and one Category C vehicle, plus four companion trailers. Finally in October 2010, the teams were each to deliver a single enhanced protection Category A vehicle with B-kit armour.

However, by November 2008 the programme had stalled following protests to the GAO from (initially 7 November) Northrop Grumman, and later (10 November) Textron Marine & Land Systems. On 17 February 2009, the GAO denied these protests.

In late April 2009, USMC Commandant General James Conway stated that the JLTV was too heavy for the marines to buy and service officials may reconsider their role in the programme. He said, "If it comes in at the weight it is right now, the Marine Corps simply cannot get involved, [it]

will not buy a Joint Light Tactical Vehicle that's 20,000 lbs [9,070 kg]."

In October 2009, the US DoD confirmed that India had expressed an interest in joining the JLTV programme alongside the United States and Australia. India and Australia ultimately opted to pursue indigenous solutions to their requirements. Israel, Lithuainia, Slovenia, and the United Kingdom have also expressed interest in the programme. Further details of those countries with a continuing interest in JLTV can be found elsewhere in this entry.

Also in October 2009, Kevin Fahey, the US Army's programme executive officer for ground support systems, told US media that the vehicles were "through the preliminary design reviews" and that the critical design reviews would take place throughout October and November 2009. It was envisaged that prototype vehicles would be delivered by May 2010.

On 1 June 2010, it was confirmed that all three contractors had delivered seven JLTV platforms for TD phase evaluation. In late July 2010, it was confirmed that all three competing contractor teams had delivered right-hand operation (RHO) platforms, which were funded by Australia.

The TD phase lasted 27 months and in May 2011 it was completed. In February 2011, the JLTV Program Office announced that the award of the follow-on EMD contract would be delayed until January or February 2012 as the army had changed requirements for the JLTV, and required it to have the same level of underbody protection as the Mine Resistant Ambush Protected ATV (M-ATV).

Upon exiting the TD phase, CDD version 3.3 was published. By this time, payload options had been reduced from three to two; in the ICD there were four payload options. Additionally, CDD version 3.3 dropped payload verbiage and replaced it with variants. From this point onwards, only two JLTV variants were required: the CTV variant, which replaced the previous Payload Category A and Payload Category B configurations; and the Combat Support Vehicle (CSV) variant, which replaced the previous Payload Category C configuration. The Payload Category B variant was eliminated as it proved to be too heavy to meet the required weight of approximately 15,639 pounds (7,093 kg) to make it transportable by army CH-47F and Marine Corps CH-53K helicopters.

The CTV was to be a four-seat vehicle with a 3,500 pound payload. The CSV was to be a two-seat vehicle with a 5,100 pound payload. These two variants now had requirements for configurations; configuration refers to the different types of mission packages installed into each of the two variants. CDD version 3.3 required six configurations.

Also in May 2011, the DoD announced plans to look at development efforts outside the JLTV programme. With the Market Survey - Similar JLTV Capabilities, JLTV programme officials sought to conduct a market analysis that looked at vehicle system information from industry regarding any products that might offer capabilities similar to those required for JLTV. Information gleaned from the survey would inform the structure of the JLTV acquisition strategy for its EMD phase, which at the time was expected to begin in early 2012. Industry representatives had until 18 May 2011 to respond to the solicitation.

By late 2011, JLTV was in danger of severe budget cuts and possible full cancellation in the wake of spiralling costs, delays, and defence-wide budgetary cutbacks; it was also competing against the HMMWV Modernized Expanded Capacity Vehicle (MECV) programme, its draft RFP was released on 11 August 2011.

Amidst the uncertainty, on 2 October 2011 the RFP draft for JLTV's EMD phase was released. This called for an average unit manufacturing cost between USD230,000 and USD270,000 in base year 2011 dollars across the JLTV family of vehicles. The USD250,000 figure is a revision of the 2011 USD320,000 figure, which was reduced from USD418,000 at the TD phase of the programme. The cost target for the B-kit armour package remained at USD65,000. EMD phase requirements also created some trade space for industry by easing weight and mobility constraints. For example, all variants had a revised maximum curb weight of no more than 14,000 lb (6,350 kg), according to the 'threshold' requirements in the RFP, whereas previously this was to be no more than 13,800 lb for EMD phase vehicles.

The RFP draft stated that up to three contracts for the EMD phase were slated to be awarded in May 2012 following a competition that was open to any companies wishing to bid. It also stated that in 2015 the Pentagon planned to solicit one firm-fixed-price contract for the JLTV's initial production phase, consisting of a base three-year LRIP award with an option for a five-year contract for FRP.

On 26 January, the RFP for JLTV's EMD phase was released. Budget priorities for FY 2013 released on the same day included the termination of the HMMWV MECV Recap programme in order to focus vehicle modernisation resources on JLTV. The October RFP draft capped the EMD phase at USD52 million per bidder. January's solicitation increased that figure slightly, but, any proposal greater than USD65 million would be considered unaffordable. The EMD contract was stated to last for 27 months for industry teams, but the army noted that the full EMD phase was set to last for 33 months. Original plans for the EMD phase had been 24-month contracts to two vendors, and later a 48-month EMD phase before awarding production and deployment contracts in the second quarter of FY 2016.

By late March 2012 (bids 27 March), it was clear that at least six teams had submitted responses to the EMD phase RFP, and following EMD phase contract awards in August 2012, in September Hardwire LLC disclosed itself as a previously unknown seventh bidder.

Not all of the TD phase contract award teamings remained in place for the EMD phase. AM General, still at the time teamed with GTV for a separate offering, offered the Blast-Resistant Vehicle-Off Road (BRV-O), a product based on its own research and development, using a design that leveraged some of AM General's experience with HMMWV MECV designs; it used the crew citadel from one of these.

BAE Systems, previously teamed with Navistar, re-aligned its team for the EMD phase to include Ford (Ford Motor Company's Power Stroke 6.7 litre turbocharged diesel engine; Ford had been considering participating in the JLTV's EMD competition with its own offering) and proposed a design that capitalised on earlier TD phase work with the Valanx.

GTV dropped its TD phase-developed design and opted to offer a low-risk solution, a further development of the in-production MOWAG Eagle.

Lockheed Martin, on the other hand, opted to stick with its TD phase offering, albeit a version that according to the company, was "hundreds of pounds lighter in weight".

Navistar, which broke away from BAE Systems for the EMD phase, offered a variant of its Saratoga light tactical vehicle, which was unveiled in October 2011 as a middle-ground offering between the HMMWV and JLTV, the latter with what was then its current TD phase requirements still technically in place.

Oshkosh proposed a variant of the company's L-ATV, unveiled in October 2011. The L-ATV has developmental origins that trace back to Oshkosh/Northrop-Grumman's failed initial JLTV proposal.

Hardwire offered a proposal featuring a hybrid-electric drive train. Hardwire's armour solutions have been employed on MRAP vehicles, and the company is known for developing an innovative 'blast chimney' that it designed to provide an outlet for energy released in an underbelly blast.

In August 2012, it was disclosed that three JLTV EMD contracts had been awarded to teams led by AM General, Lockheed Martin, and Oshkosh, worth about USD64.5 million, USD66.3 million, and USD56.4 million, respectively.

Under these awards, each contractor was to deliver 22 JLTV prototypes within a year of award, including two- and four-seat variants, as well as a companion trailer. CDD version 3.6 was published for entry into the EMD phase in August, which reduced the total number of configurations required from six to four.

Those companies not awarded EMD contracts were, according to the US Army, welcome to proceed at their own risk and expense with development and could bid for JLTV's final production contract, providing the contracting authority had been notified of their intention within 30 days of the EMD award.

It was disclosed on 31 August 2012 that Navistar had filed a JLTV protest with the US GAO; it was disclosed on 4 September 2012 that Navistar had withdrawn that protest.

Full-scale testing of the EMD phase prototypes supplied by each contractor began in September 2013 at the Aberdeen Proving Ground in Maryland, Yuma Proving Ground in Arizona, Redstone Arsenal in Alabama, and elsewhere. Involving 22 vehicles and six trailers from each of the three JLTV competitors, the 14-month trials included protection-related testing and rigorous reliability testing over various terrains and in different weather conditions.

In June 2014, the army issued an RFP draft for the JLTV FRP phase. On 12 December 2014, the army released the final RFP for JLTV LRIP and FRP and gave competitors until 10 February 2015 to refine and submit their bids. The army, on its behalf and the marines, stated plans to select a winner and issue a single contract award in the late summer of 2015.

The winning contractor would build approximately 17,000 JLTVs for the US Army and USMC during three years of LRIP, followed by five years of FRP. The first army unit would be equipped with JLTVs in FY 2018, and the army's complete acquisition of 49,099 JLTVs would be completed in 2040, with 2,200 JLTVs delivered each year between 2020 and 2036. The marines would begin acquiring their 5,500 JLTVs at the beginning of production and would be completed by FY 2022.

FY 2015 budget requests included USD164.6 million (research, development, test, and evaluation [RDT& E] USD45.7 million) for 176 army JLTV, and USD7.5 million ([RDT & E] USD11.5 million) for seven USMC JLTV in various configurations.

The total procurement cost of the JLTV programme was at this time stated as USD30.04 billion (official DoD estimate) plus USD0.98 billion in R&D funds, giving a total estimated programme cost of USD31.03 billion (figures are aggregated annual funds spent over the life of the programme with no price/inflation adjustment).

By April 2015, TACOM had rescheduled JLTV's Milestone C decision for August 2015. The army and marines still expected LRIP to commence in FY 2015, with TACOM expecting JLTV to enter FRP by FY 2018. The army expected JLTV to achieve IOC in 2019.

According to US DoD FY 2016 budget request documentation, the marines' procurement objectives had also been revised; numbers were cut from 5,500 to 4,483, giving a revised combined army/marines total of 53,582 JLTVs.

The GAO estimated that the DoD would allocate about USD53.5 billion for the JLTV programme, allocating USD1.082 billion for RDT & E and at least USD52.298 billion for procurement.

Oshkosh was awarded the JLTV contract on 25 August 2015. The award includes a base contract and eight option years covering three years of LRIP and five years of FRP.

The initial contract award is valued at USD114 million and is for two-year LRIP. The LRIP was slated to begin in the first quarter of FY 2016, with Oshkosh commencing delivery of vehicles approximately 10 months after contract award. An FRP decision was expected in FY 2018, with associated production commencing in November or December 2019. This has slipped and an FRP decision is now expected in FY 2019. In early 2019 it was revealed that the US government was considering possible requirement changes before making a full-rate production decision.

The initial JLTV contract award has a potential value of USD6.749 billion and calls for a maximum of 16,901 JLTVs, and includes a sustainment element. The JLTV manufacturing is being performed in Oshkosh, Wisconsin, United States.

At this juncture, USMC IOC was expected in FY 2018, with 69 JLTVs for a marine infantry battalion, with procurement by the marines complete by FY 2022. The army anticipated having its first unit equipped (FUE) in FY 2018, with an IOC by FY 2019. Army procurement would then last until approximately 2040. Overall JLTV requirements remained at 5,500 for the USMC and 49,099 for the army.

On 8 September 2015, it was disclosed that Lockheed Martin would protest the award to Oshkosh, and on the same day it was also disclosed that AM General had decided not to file a protest. The GAO had 100 days to review the programme and issue a decision on the protest. Any work that would have been performed under the contract stopped during the review period. On 15 December, the GAO dismissed Lockheed Martin's protest because the company on 11 December decided to file a 'Notice of Post-Award Bid Protest' with the US Court of Federal Claims. According to a source with knowledge of the procedures, it is uncommon for a company to file with the court close to a GAO protest decision. Immediately after the GAO dismissed the protest, the army instructed Oshkosh to resume work on the JLTV order. Lockheed Martin filed its preliminary injunction on 17 December, claiming that new army-supplied information related to the contract emerged towards the end of the GAO's protest process that was not considered before its ruling and no deadline extension was granted. The US Court of Federal Claims denied Lockheed Martin's request to stop work while the lawsuit was pending, allowing Oshkosh to continue building vehicles during the process. On 17 February 2016, Lockheed Martin withdrew its protest of the JLTV contract award decision in the Court of Federal Claims.

In the Pentagon's FY 2017 budget, it requested USD587.5 million to procure 1,828 JLTVs for the army and USD113.2 million to procure 192 for the USMC, the latter number 77 fewer than previously proposed for budgetary reasons. The marines reaffirmed the intention to acquire 5,500 JLTVs. About USD34.7 million was requested for R&D between the army and USMC's JLTV programmes.

In February 2016, limited details of JLTV testing became available. J Michael Gilmore, the director of the Pentagon's Operational Test & Evaluation Office, released his annual report reviewing the JLTV programme and detailed how each company's prototypes performed in a limited user test (LUT). The reliability requirement for JLTV was that it must average 2,400 miles (3,862 km) between significant failures (mean miles between operational mission failure; MMBOMF). The current up-armoured HMMWV surpasses this figure, achieving 2,968 miles. Oshkosh's JLTV prototype achieved 7,051 MMBOMF, Lockheed's achieved 1,271 MMBOMF, and AM General's prototype achieved just 526 MMBOMF.

With regard to protection, Gilmore stated that both Oshkosh and Lockheed prototypes met all threshold force protection requirements and some objective-level requirements. The protection, Gilmore stated, is superior to the up-armored HMMWV and similar to multipurpose ATV (MATV) without the underbody improvement kit across the whole spectrum of tested threats. It was also stated that AM General's prototype would require significant redesign to meet threshold requirements in force protection.

In March 2016 it was disclosed that overall JLTV costs were to decrease by USD5.9 billion. According to the Pentagon's Selected Acquisition Report (SAR) released on 24 March 2016, which provided details on major acquisitions cost, schedule, and performance changes for the December 2014 to December 2015 reporting period, the JLTV's total programme costs dropped 19.32%, from USD30.574 billion to USD24.668 billion. This was primarily owing to revised estimates for unit costs of vehicles and kits based on realised savings, which accounted for a USD3.7 billion decrease. A stretched out procurement owing to budget adjustments and revised assumptions

regarding the maximum buy profile year decreased costs by USD1.28 billion, and several other changes - such as for cost estimation methodologies and indices - accounted for another decrease amounting to USD921 million. The SAR's total cost estimates include R&D, procurement, military construction, and acquisition-related operations and maintenance associated with a programme, the Pentagon stated. These reflect actual costs so far and anticipated costs in the future, with all estimates in fully inflated then-year dollars. Unit costs could come down further in future procurements if FMS are booked.

Also in March 2016, the first delivery order for JLTV was announced. On 23 March, the army ordered 657 JLTVs, along with kits and support. The USD243 million order included vehicles for the army and marines. According to Oshkosh, the vehicles, trailers, and installed kits for this order were to be delivered by the first quarter of FY 2018. As part of the original JLTV LRIP/FRP Base Award in August 2015, an initial 201 JLTVs for the test and evaluation phase were ordered. The 657-vehicle order was an exercised option from the programme's eight-year option.

In April 2016, it was disclosed that JLTV IOC for the army and marines would be delayed as a result of earlier protests and associated issues. Revised dates were an initial USMC operating capability delayed by about one year to the first quarter of FY 2020, with procurement complete by FY 2022. The army anticipated a six-month delay, reaching IOC in mid-2019. Army procurement was still stated to last until approximately 2040.

On 11 May 2016, the army suggested that the JLTV could be used as the platform for the upcoming Light Reconnaissance Vehicle (LRV) programme instead of procuring a new system. The LRV will be an off-road platform for carrying a suite of intelligence, surveillance, and reconnaissance sensors; it is light enough to be carried by a CH-47 Chinook helicopter. The army continues to work with Training and Doctrine Command (TRADOC) to help shape the final LRV requirements.

In June 2016, it was disclosed that the UK MoD was in talks regarding the potential acquisition of JLTV as a Foreign Military Sale (FMS). Further details of this developing requirement can be found in a separate sub-section of this entry.

On 26 September 2016, the US Army placed an order for another 130 JLTVs and 748 kits valued at USD42 million; this was the third JLTV order since contract award.

At the end of September 2016, the US army accepted its first seven JLTVs; shipping of these to test sites began in October. Some JLTV testing was deferred during the EMD phase because the government did not want to pay for testing with three suppliers, and it was set for testing with a fleet of 108 JLTVs. This test effort included vehicles shipped to Yuma, Arizona, for automotive and mobility testing; to Fort Huachuca, Arizona, for cyber, electronic warfare, and C4 testing; to Aberdeen Proving Ground, Maryland, for reliability and automotive testing; and to Alaska for automotive and environmental testing.

At AUSA 2016, Scott Davis, programme executive officer for CS&CSS, stated that the overall JLTV programme is expected to run for five years less than expected and save about USD5.9 billion, as Oshkosh's final competitive bid was low enough so the army decided to 'buy to budget' and get more platforms each year, which shrunk the total length of the contract and increased cost avoidances accrued each year.

At AUSA 2016, Oshkosh displayed a JLTV GP variant equipped with an EOS R-400S-MK2 remote weapon system integrated with Orbital ATK's M230 LF 30 mm lightweight automatic chain gun, this clearly a capability demonstration with the LRV requirement in mind.

The fourth JLTV delivery order was placed by the US Army on 2 January 2017. This was valued at an estimated USD17 million, and called for 409 vehicles, 1,984 installed kits, 82 packaged kits, as well as related services and support for additional vehicles and kits. Also in January 2017, it was reported the USAF was considering acquiring JLTVs for its security forces that protect missile launch facilities.

The Pentagon's 2018 budget request included USD1.143 billion for JLTV production, research, development, test, and evaluation. For procurement, the DoD requested USD1,099 billion: USD804.4 million for 2,110 JLTVs for the army, USD60.5 million for 140 JLTVs for the air force, and USD233.6 for 527 JLTVs for the marine corps. The army and marines requested a total USD44.2 million for research, development, test, and evaluation. According to Oshkosh, by 2017 the JLTV had undergone more than 400,000 miles of developmental and governmental testing.

In May 2017, it was reported that the JLTV-RV (JLTV - Reconnaissance Vehicle) is to be incorporated into the current JLTV Technical Data Package (TDP) and will be a kit option on the next JLTV contract. The JLTV-RV is designated as the interim solution for the LRV requirement.

On 14 June 2017, the first US soldiers to receive JLTVs were revealed. According to Colonel Shane Fullmer, the army's JLTV programme manager, the first army unit to receive JLTVs would be an Infantry Brigade Combat Team (IBCT) in the 10th Mountain Division at Fort Drum, with the vast majority of their 500 HMMWVs replaced by early 2019. Following the 10th Mountain Division, the 173rd Airborne Brigade Combat Team in Vicenza, Italy, and then a brigade in Hawaii (probably with the 25th Infantry Division) would receive JLTVs. According to Andrew Rodgers, light tactical vehicle programme manager for the marines, the first Marine users would be a to-be-decided, -to-be-identified infantry battalion within II Marine Expeditionary Force (MEF) at Camp Lejeune, which would receive 69 JLTVs to replace HMMWVs on a one-for-one basis. Within 12 months, these would be followed by a unit with I MEF and then a unit with III MEF. It was also disclosed by Andrew Rodgers that the marines wished to adjust its acquisition objective for JLTV by 65% to up to 9,091 vehicles, which it hoped to acquire as quickly as funding allowed.

Also in June 2017, the US army disclosed the average annual operating cost of the JLTV was USD34,964. It also disclosed the Average Procurement Unit Cost (APUC) (in FY15 USD) was USD344,000, this including an Average Unit Manufacturing Cost (AUMC) for the JLTV base vehicle of USD253,000, a fleet average armour cost of USD22,000, a fleet average of Contract Furnished Equipment (CFE) of USD16,000 and a fleet average of USD14,000 for other procurement costs.

The fifth JLTV delivery order was announced by Oshkosh on 1 August 2017. This was valued at an estimated USD195 million, called for 748 vehicles and 2,359 installed and packaged kits, and was scheduled for completion by November 2018.

Further details of the 140 JLTVs requested by the air force in FY 2018 also appeared in August. The service is known to want to replace its entire fleet of 3,270 HMMWVs, the average age of which is about 10 years. The initial air force request was understood to require 46 Utility variants, 48 GP variants, and 46 Heavy Gun Carrier variants. Fielding is scheduled for FY 2019, with vehicles to be used by security forces, explosive ordnance disposal teams, para-rescue and personnel recovery units, tactical air control party teams, and special tactics forces.

On 1 September 2017, Oshkosh announced the sixth JLTV order, this valued at more than USD177 million and including 611 vehicles and 1,789 installed and packaged kits. This sixth order brought the total of JLTVs ordered to 2,756. At this juncture full-rate JLTV production was slated to begin in November or December 2019, ahead of fielding, with an initial operating capability (IOC) expected for early to mid-2020.

At AUSA 2017, JLTVs were displayed in three new configurations. Oshkosh displayed a General Purpose variant fitted with a Boeing Compact Laser Weapon System (CLWS), a Kongsberg Protector LW 30 Remote Weapon System (RWS) with a M230LF cannon, and a communications suite that includes a Thales VRC-111 and Thales VRC-121 VIPER. The company also displayed a Utiliy variant equipped with the Boeing Maneuver Short Range Air Defense (SHORAD) Launcher including a M3P 12.7 mm heavy machine gun, M299 launcher with four Longbow Hellfire missiles, sensor suite, and a communications suite including a Thales VRC-111. Rafael displayed a General Purpose variant fitted with the company's Samson RWS Dual Stabilized RWS with M230 LF cannon, and the Trophy Light Active Protection System (APS).

On 21 December 2017, Oshkosh announced the seventh JLTV order, this valued at USD100.1 million and including 258 vehicles and associated installed and packaged kits. At this time it was also announced that over 1,000 JLTVs had been delivered. On 5 February 2018, Oshkosh announced the eighth JLTV order, this valued at USD106 million and including 416 vehicles and associated installed and packaged kits.

Budgetary documentation released in early 2018 revealed that inclusive of FY 2019 budget announcements the air force had requested a total of 230 JLTVs. Also in early 2018 the marines' 2018 planning objective for JLTV was confirmed to be 9,091, although funding as of February 2018 allowed for only 7,622 JLTVs through FY 2023, with deliveries concluding the first quarter of FY 2025. Army requirements remained at 49,099, 2,000 of which are JLTV A0 and the remainder JLTV A1. All marines' JLTVs will be A1.

On 29 June 2018, Oshkosh announced the ninth JLTV order, this valued at USD484 million and including 1,574 vehicles and associated installed and packaged kits. This ninth order brought the total of JLTVs ordered to 5,004. At this time Oshkosh also announced that it had produced more than 2,000 JLTVs and had delivered more than 1,600 JLTVs to the army and marine corps.

For FY 2019 (1 October 2018–30 September 2019) the Pentagon requested USD1.962 billion in total for JLTV but Congress reduced that by USD39.999 in funds appropriated for army JLTV procurement, and by USD7.737 million for US marine corps procurement.

Also in October 2018 the US Army confirmed that it would begin equipping its first unit with JLTVs in January 2019, and that it expected to complete that fielding in March 2019.

On 27 November 2018, the US Army announced the tenth and most recent JLTV order, this valued at USD1.69 billion and including 6,107 vehicles and 22,166 kits. Delivery is expected to be completed in September 2019. This 10th order brought the total of JLTVs ordered to 11,111. At the same time Oshkosh announced that it had delivered more than 2,600 JLTVs to the army and marine corps. The first US Army unit to receive JLTVs was the 1st Armored Brigade Combat Team, 3rd Infantry Division at Ft Stewart, and not the 10th Mountain Division at Fort Drum as initially stated. Following an announcement in December 2018 that a total of 500 JLTVs would be delivered by the end of March 2019, deliveries commenced the week of 7 January 2019.

The marines announced on 28 January 2019 that its first JLTV had been fielded that day at the School of Infantry West at Camp Pendleton, California. By the end of May 2019 the Marines will have fielded its first 55 vehicles to support units at training locations including the School of Infantry West, School of Infantry East and the Motor Transport Maintenance Instructional Company. The first JLTVs for operations will go to 3rd Battalion, 8th Marines in Camp Lejeune, NC, and once that fielding takes place in July the Marine Corps will be able to declare Initial Operational Capability (IOC) for the JLTV. By the end of fiscal year 2019 when between 250 and 300 JLTVs will be delivered, all three Marine Expeditionary Forces – I MEF in Camp Pendleton, II MEF in Camp Lejeune and III MEF in Okinawa, Japan, will have received some combination of JLTVs. About 1,000 Further JLTVs are scheduled to be fielded during fiscal year 2020.

To coincide with these first fieldings, Oshkosh confirmed that more than 3,000 JLTVs had been delivered to the army and marine corps.

Also in January 2019 the army reserve announced that it was set to acquire 60 JLTVs for training in preparation for fielding to the entire force. No date for actual fielding was given.

Based on feedback from soldier and marine testing and technical and support issues raised in a FY 2018 Director, Operational Test and Evaluation (DOT&E) annual report, the full rate production decision for JLTV has been confirmed as delayed from the intended December 2018 to mid-2019, while the army weighs possible requirement changes.

For FY 2020 (1 October 2019-30 September 2020) the Pentagon's JLTV funding request totals USD1.641 billion, this to procure 2,530 vehicles for the army, 1,398 for the marines (with 3,986 more between FY 2021 and FY 2024), 140 for the air force, and 22 for the navy. Other FY 2020 budget activities include USD4.8 million for engineering and manufacturing development.

In March 2019 Oshkosh unveiled an ambulance variant of the L-ATV, Oshkosh's designation for the platform on which JLTV is based. The ambulance is based on the utility variant of JLTV/L-ATV but instead of having a flatbed in the back, there is a protected ambulance module.

In March 2019 it was reported that army's FY 2020 budget request included proposed cuts to pay for modernisation priorities, with one of those proposed cuts being the JLTV. It was reported that over the coming five years the service will spend USD800 million less on the JLTV programme than initially expected, this potentially resulting in the purchase of 1,900 fewer vehicles.

As of May 2019 the service had not changed its approved acquisition objective (AAO) of 49,099 JLTVs.

2019-06-10

Export interest

In June 2016, it was disclosed that the UK MoD was in talks regarding the potential acquisition of JLTV as an FMS. The UK MoD confirmed that interest was being shown in acquiring JLTV to meet the Package 1 requirement of the Multi-Role Vehicle-Protected (MRV-P) programme. In January 2017, it was confirmed that negotiations for an FMS acquisition of JLTV had commenced.

On 10 July 2017, the US Defense Security Cooperation Agency (DSCA) announced that the US state department had approved a possible Foreign Military Sale valued at USD1.035 million to the United Kingdom for 2,747 JLTVs plus options that include armour B-kits. Any sale must still be ratified by the US Congress. *Jane's* sources suggest the United Kingdom's current requirement is closer to 747 JLTVs, the quoted 2,747 figure an aspirational total requested at this stage to simplify additional acquisitions in the future.

It was first reported in November 2017 that the Lithuanian MoD had contacted the US Defense Department regarding the potential acquisition of up to 200 JLTVs, with about EUR100 million reportedly earmarked for the procurement. The final procurement decision is expect during 2019-2020, with deliveries then expected to commence in 2021. The JLTVs would be distributed across Lithuania’s armed forces to fill shortages brought about by wear and tear of equipment that is seeing an increased in usage. Lithuania currently uses a mix of AM General HMMWV and armoured Toyota Land Cruiser 200s supplied by Achleitner.

In November 2018, Slovenian Defence Minister Karl Erjavec disclosed that Slovenia had signed a government-to-government agreement with the US on the procurement of 38 JLTVs for the army’s medium-sized battlegroup. Deliveries are to run between 2021-2023. This is the first confirmed Foreign Military Sale of the JLTV.

2019-06-10

Description

Given the highly competitive nature of the JLTV competition, only limited technical details have been released. No specific dimensions were revealed and only operating weight data has been released. This includes a gross vehicle weight (GVW) of 10,266 kg. Payload for the two-door variant is quoted as 2,318 kg, payload for the four-door variant is quoted as 1,590 kg.

The additional data below combines available information with stated JLTV capability requirements from various stages of the competition. The basic Specifications table elsewhere in this entry includes only data that has been confirmed by either Oshkosh or the US Army. With contract protests now concluded and Oshkosh working through the LRIP phase of the programme, additional detailed information is expected to become available in the coming months.

As previously mentioned, the JLTV is based on Oshkosh's L-ATV, additional details of which can be found elsewhere in this section.

The JLTV is based on Oshkosh's TAK-4i (i = intelligent) independent suspension system. About 26,000 military vehicles are fitted with an earlier version of the system, these including Oshkosh's Medium Tactical Vehicle Replacement (MTVR), Logistic Vehicle System Replacement (LVSR), and M-ATV. The TAK-4 system has also been retrofitted to the Force Protection Cougar and BAE Systems RG-33 MRAPs. The majority of systems supplied have been coil-sprung. The TAK-4i version fitted to the JLTV remains undisclosed. It is not coil-sprung, is of the adjustable ride-height type and is thought to be hydraulic. The Suspension Aided Egress (SAES) capability levels side to side and front to rear on slopes or grades when selected by the operator. The front and rear suspension height can also be independently controlled for ship and transportability. The suspension system has ride height control at all four wheels. The system offers up to 20 inches (51 cm) of wheel travel, 25% more than the current standard.

Motive power for the JLTV is provided by a digitally controlled Gale Banks Engineering 866T V8 cylinder 6.6 litre diesel; this based on the architecture of the General Motors (GM) Duramax LML. Power output is 340 hp (254 kW). In commercial use, power output of the standard Duramax LML engine is up to 397 hp (296 kW) at 3,000 rpm. Production of the Duramax LML engine concluded in 2017, the unit replaced by the Duramax LP5. JLTV A1 models that were introduced in 2017 are powered by a derivation of this engine. An Allison 2500SP six-speed fully automatic transmission is fitted.

According to Oshkosh, the JLTV could be fitted with the Oshkosh ProPulse diesel-electric powertrain, which was previously fitted to the Oshkosh Heavy Expanded Mobility Tactical Truck (HEMTT). A hybrid powertrain was not a requirement of the JLTV programme.

Protection levels are classified, but the JLTV is known to offer protection levels greater than those of up-armoured HMMWVs, and comparable to that of original MRAP-class designs and the Oshkosh M-ATV. The JLTV is about 30% smaller than the M-ATV, and with a JLTV curb weight requirement of 14,000 pounds (6,400 kg), the vehicle is about one-third the weight of the heavier MRAP 4×4 models, and almost half the weight of the original MRAP models.

The JLTV is fully compliant with the US Army's Long-Term Armour Strategy, which is based on the A-kit/B-kit modular armour principle. The A-kit, which is installed during build, is primarily fixings for add-on armour, but can include small amounts of armour fitted in difficult-to-reach areas. The B-kit is essentially the add-on armour, which is added when required and as a modular add-on. According to the US Army, the A-kit/B-kit concept allows the army flexibility in several areas: the armour B-kit can be taken off when not needed, reducing unnecessary wear-and-tear on the vehicles; the army can continue to pursue upgrades in armour protection - adapting B-kits to match the threat; and the versatility of the B-kit enables the transfer of armour from unit to unit - making armour requirements affordable by pooling assets versus buying armour that is only for one vehicle. JLTVs in both A- and B-kit configuration have been delivered.

Additional survivability aids include an automatic fire extinguishing system to protect the crew cabin. Fuel tanks are self-sealing, mounted externally, and shielded by the vehicle structure. Each

crew seat has a combined seat and blast restraint device. Ingress time for a crew of four in combat equipment is 30 seconds or less. Egress with B-kit doors is within 10 seconds.

Tactical mobility requirements for the JLTV included at least 600 mean miles before an essential function failure and the vehicle must be capable of travelling for 3 miles (5 km) cross-country after having endured three 0.3-inch perforations of half-full main fuel tanks. Standard tyre fit for the JLTV is Michelin XZL 365/85 R 20. CTIS is standard fit and run-flat inserts are optional. The JLTV must be capable of operation in altitudes from 500 feet below to 12,000 feet above sea level, and maintain full mission capability in temperatures from -40°C to +52°C.

The JLTV must be capable of accelerating from standstill to 30 mph in 9.4 seconds on dry, level, hard terrain (threshold), with an objective requirement of 7 seconds. Maximum speed is quoted as >70 miles per hour (>113 km/h). On a single tank of JP-8 fuel, the JLTV must have a range of 350 miles at 35 miles per hour (56 km/h) on paved roads or 300 miles (483 km) at GCVW in operational terrain. Also required is the ability to ford 60 inches (1.5 m) of saltwater with a fording kit, in forward and reverse, while maintaining contact with the ground. Other tactically driven mobility requirements include a 27-ft turning radius (25 ft objective) and the ability to climb 18-inch vertical obstacles in forward and reverse. The JLTV must be able to drive off an 18-inch vertical step at 15 mph and sustain no mechanical damage. It will be capable of traversing a 20° V-ditch that is 25 ft wide at an approach angle of 45°. It can 'jump' a 6-inch parallel curb at 15 mph and traverse a 20-ft flight of stairs at 5 mph. It must climb a 60% dry, hard-surfaced gradient and traverse a 40% sideslope with no degradation in driver control.

Transportability requirements include sea, rail, and air. Air transport includes internally by C-130 Hercules and as an underslung load by CH-47 Chinook and CH-53 Sea Stallion helicopters.

2019-06-10

Variants

The JLTV family and its nomenclature evolved throughout the development process and the US Army has allocated M designations to four individual JLTV configurations.

In JLTV's Initial Capability Document (ICD), there were four payload options, this later reduced to three: Payload Categories A (1,600 kg), B (1,800-2,000 kg), and C (2,300 kg). All were to be transportable externally by CH-47 Chinook and internally by C-130 Hercules aircraft.

By the time CDD version 3.3 was published at the conclusion of the Technology Development (TD) phase, payload options had been reduced to only two and payload verbiage had been dropped. This is replaced by reference to two stated variants, the four-seat Combat Tactical Vehicle (CTV) and two-seat Combat Support Vehicle (CSV).

Further evolution occurred, but the JLTV continued to be based around two variants, a two-seat and a four-seat. There are three base vehicle platforms: Utility (JLTV-UTL), Close Combat Weapons Carrier (JLTV-CCWC), and General Purpose (JLTV-GP). The Utility base vehicle platform is a two-door configuration, the GP and Close Combat Weapons Carrier base vehicle platforms are a four-door configuration. Standard US military M-designators are applied to base vehicle platforms when outfitted to a specific Mission Package Configuration. It should be noted that the Mission

Package Configuration can be the same as base vehicle platform. For clarity, the current JLTV variants are:

- **M1278 Heavy Guns Carrier** - GP (JLTV-GP) base vehicle platform in Heavy Guns Carrier Mission Package Configuration
- **M1279 Utility** - Utility (JLTV-UTL) base vehicle platform in Utility Mission Package Configuration
- **M1280 GP** - GP (JLTV-GP) base vehicle platform in General GP Mission Package Configuration
- **M1281 Close Combat Weapons Carrier** - JLTV-CCWC base vehicle platform in CCWC Mission Package Configuration

There is also a companion trailer (JLTV-T), this towable by all JLTV variants.

In May 2017, it was reported that the JLTV-RV (JLTV - Reconnaissance Vehicle) is to be incorporated into the current JLTV Technical Data Package (TDP) and will be a kit option (probably Mission package Configuration) on the next JLTV contract.

2019-06-10

Status

In production. Contract awarded to Oshkosh in August 2015 (see text for details).

2019-06-10

Contractor

Oshkosh Defense.

A JLTV-GP during a closed demonstration in the UK during early 2018 (Oshkosh)

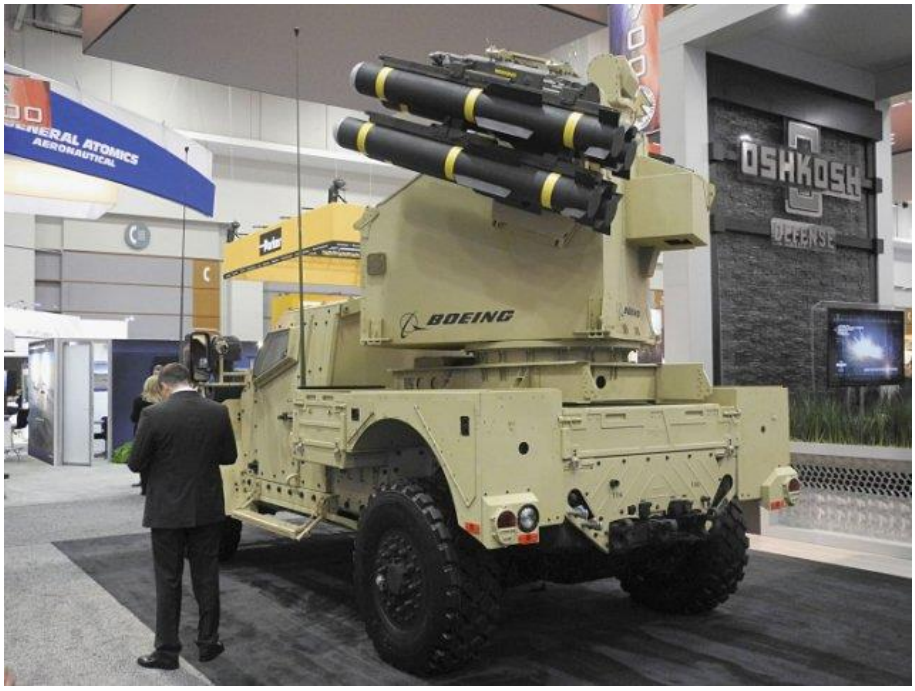
1721126

Promotional image of a JLTV in M1279 Utility (JLTV - Utility) configuration (Oshkosh Defense)

1721184

A USMC LRIP JLTV in M1280 GP (JLTV-GP) configuration; this vehicle is also fitted with a deep fording kit and tyre chains (Oshkosh)

1644845



At AUSA 2017, JLTVs were displayed in three new configurations, two of these by Oshkosh and including the example shown, a Utiliy variant equipped with the Boeing Maneuver Short Range Air Defense (SHORAD) Launcher including a M3P 12.7 mm heavy machine gun, M299 launcher with four Longbow Hellfire missiles, sensor suite, and a communications suite including a Thales VRC-111 (Gray Robson-Parker)

1644936

To demonstrate capability, Oshkosh has fitted a JLTV Heavy Guns Carrier variant with an EOS R-400S-MK2 remote weapon system integrated with Orbital ATK's M230 LF 30 mm lightweight automatic chain gun (Oshkosh)

1644738

Oshkosh Defense's L-ATV was the winner of the US military's JLTV contract. The vehicle shown is in M1278 Heavy Guns Carrier configuration (Oshkosh)

1635394

In August 2015, Oshkosh Defense's L-ATV was announced as winner of the US military's army-led JLTV programme. The vehicle shown during trials is in GP configuration (Oshkosh)

1635395

Oshkosh Defense's JLTV is fitted with Oshkosh's TAK-4i fully independent suspension. The vehicle shown during trials is in GP configuration (Oshkosh)

1635396

Rear three-quarter view of Oshkosh Defense's L-ATV during JLTV evaluation. The vehicle shown during trials is in GP configuration (Oshkosh)

1635397

Oshkosh Defense's JLTV is air-transportable by Lockheed C-130 Hercules transport aircraft. The vehicle shown during trials is in GP configuration (Oshkosh)

1635398

Oshkosh Defense's JLTV is air-transportable by Lockheed C-130 Hercules transport aircraft. The vehicle shown during trials is in GP configuration (Oshkosh)

1644711

Oshkosh Defense's JLTV is transportable as an underslung load by CH-47 Chinook helicopter. The vehicle shown during trials is in Utility configuration (Oshkosh)

1644712

Oshkosh Defense's JLTV Utility (previously CSV) variant can transport two passengers and carry 5,100 pounds (Oshkosh)

1635399

On entering service, the JLTV will replace a percentage of the current AM General HMMWV/Humvee fleet. The selected JLTV is based on Oshkosh's L-ATV. The variant shown here

is M1278 Heavy Guns Carrier (Oshkosh Defense)

1644639

On entering service, the JLTV will replace a percentage of the current AM General HMMWV/Humvee fleet. The selected JLTV is based on Oshkosh's L-ATV. The variant shown here is a M1278 Heavy Guns Carrier (Oshkosh Defense)

1644620