



# Joint Light Tactical Vehicle (JLTV): Background and Issues for Congress

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August 3, 2009

Congressional Research Service

7-5700

[www.crs.gov](http://www.crs.gov)

RS22942

## **Summary**

The Joint Light Tactical Vehicle (JLTV) is currently being developed by the Army and the Marine Corps as a successor to the 11 different versions of the High Mobility, Multi-Wheeled Vehicle (HMMWV) that have been in service since 1985. There are concerns about the affordability of JLTVs and its redundancy with other tactical wheeled vehicles. This report will be updated as events warrant.

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## Background<sup>1</sup>

The JLTV is an Army-led multi-service initiative to develop a family of future light tactical vehicles to replace many of the 160,000 HMMWVs used by the armed services today. HMMWVs, which first entered service in 1985, were developed during the Cold War when improvised explosive devices (IEDs) and other anti-vehicle explosive devices were not a major factor in military planning. The HMMWV's demonstrated vulnerability to IEDs and the difficulties and costs experienced in "up-arming" HMMWVs already in the inventory have led to renewed emphasis on vehicle survivability. With more than 50% of the Army's total tactical wheeled vehicle fleet nearing the end of its useful life, and with the needs of the services to repair equipment and grow their forces, the JLTV, with its scalable armor protection, is intended to replace a large portion of the HMMWV fleet. DOD officials have emphasized that JLTVs are not intended to replace HMMWVs "one for one."<sup>2</sup> The Pentagon envisions HMMWVs remaining in service for many years to come, and about 3,000 to 5,000 HMMWVs continue to be produced on an annual basis.

## JLTV Program<sup>3</sup>

### What Is the JLTV?

The JLTV program is a joint Army/Marine Corps effort to develop and produce three categories of vehicles and associated trailers. Category A JLTVs are intended for general purpose mobility and would carry a 3,500 lb. payload. Category Bs are intended to serve as infantry carriers, command and control and reconnaissance vehicles, and weapons carriers and would accommodate a 4,000 to 4,500 lb. payload. Category Cs are intended to serve as shelter carriers, prime movers, and ambulances and would carry a 5,100 lb. payload. JLTVs are to be designed with scalable armor, enhanced suspension, and drive train capability to accommodate future load carrying capacity. As planned, JLTVs would be more mechanically reliable, maintainable (with on-board diagnostics), all-terrain mobile, and equipped to link into current and future tactical data nets. Strategic and operational transportability by ship and aircraft are also key JLTV design requirements.

### Program Structure<sup>4</sup>

The JLTV is an Acquisition Category (ACAT) 1D program.<sup>5</sup> The Army bears the overall responsibility for developing the JLTV through its Joint Program Office within the Army's Tank,

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<sup>1</sup> Alan L. Gropman, "Combat Vehicle Sector Could be Headed for Turbulent Times," *National Defense*, April 25, 2008, and James P. Miller, "Race is On to Replace Humvee," *Chicago Tribune*, June 21, 2008.

<sup>2</sup> Kris Osborn, "DOD's JLTV Becoming an International Effort," *Defense News*, August 4, 2008.

<sup>3</sup> Information in this section is taken from the Army Product Manager, Joint Light Tactical Vehicle website, <http://peocscs.tacom.army.mil/pmJLTV.html>, last visited January 7, 2009, and Marine Corps PEO Land Systems Joint Light Tactical Vehicle website, <http://www.marcorsyscom.usmc.mil/peolandssystemsjltv.aspx>, last visited January 7, 2009.

<sup>4</sup> CRS Report RL34026, *Defense Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process*, by Moshe Schwartz, provides an extensive discussion of the defense acquisition process.

Automotive, and Armament Command (TACOM) in Warren, Michigan. Marine participation is centered on a program office under the supervision of the Program Executive Officer Land Systems (PEO LS) Marine Corps at Quantico, Virginia.

## **Program History**

In November 2006, the Joint Chief of Staff's Joint Requirement Oversight Council (JROC) approved the JLTV program. On December 22, 2007, the Under Secretary of Defense for Acquisition, Technology, and Logistics USD (AT&L) signed an Acquisition Decision Memorandum (ADM) directing the JLTV Program to move from the Concept Refinement Phase into the Technology Development Phase (TDP) of the DOD System Acquisition Process. The Army and Marines had intended to issue a Request for Proposal (RFP) for Technology Development Phase as early as October 2007. Concerned with funding adequacy, technical maturity, and shifting requirements, the Pentagon's acquisition executive, John Young, disapproved the issuance of the RFP and directed the Army and Marines to "go back to the drawing board and develop a robust technology development phase."<sup>6</sup> On February 5, 2008, an RFP for Technology Development Phase was issued to industry.<sup>7</sup> The RFP stated that the government desired to award three contracts for the JLTV Technology Development Phase. The RFP stipulated that proposals would be due April 7, 2008, and the TDP would last 27 months. Contractors would build four test sub-configurations during the first 15 months, followed by 12 months of testing. The Army and Marines planned on issuing technology development contracts in June 2008, but in order to have sufficient funding for more than two technology development contracts, DOD requested to reprogram \$60 million in FY2008 funds.<sup>8</sup>

## **Technology Development Contracts Awarded<sup>9</sup>**

On October 28, 2008, three awards were made for the JLTV Technology Development Phase for a total of \$166 million. The three industry teams were BAE Systems Land and Armaments, Ground Systems Division, Santa Clara, CA; General Tactical Vehicles, Sterling Heights, MI—a joint venture between General Dynamics Land Systems and AM General; and Lockheed Martin Systems Integration, Oswego, NY.

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(...continued)

<sup>5</sup> The 12<sup>th</sup> Edition of the *Defense Acquisition University Glossary*, July 2005, defines an ACAT 1D program as "a Major Defense Acquisition Program (MDAP) which is estimated by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) to require the eventual expenditure for Research, Development, Test, and Evaluation (RDT&E) of more than \$365 million (FY2000 constant dollars) or the procurement of more than \$2.19 billion (FY2000 constant dollars)."

<sup>6</sup> Jason Sherman, "Pentagon Halts JLTV Competition, Directs Revised Strategy," *InsideDefense.com*, September 24, 2007.

<sup>7</sup> JLTV Request for Proposal, W56HZV-08-R-0210, February 5, 2008, and Marjorie Censer, "JLTV Solicitation Calls for Three Contractors: Officials Say More are Possible," *InsideDefense.com*, February 5, 2008.

<sup>8</sup> Jason Sherman, "Army Seeking Funds to Ensure Three JLTV Contracts; Delay Possible," *InsideDefense.com*, July 17, 2008.

<sup>9</sup> Unless otherwise noted, information in this section is taken from TACOM's JLTV Program website, <http://contracting.tacom.army.mil/MAJORSYS/JLTV/jltv.htm>, updated on November 13, 2008, accessed January 7, 2009, and the Marine Corps PEO Land Systems JLTV website, <https://www.marcorsyscom.usmc.mil/peolandsystems/jltv.aspx>, accessed January 7, 2009.

## **JLTV Contracts Protested**

On November 7 and November 12, 2008, protests were filed with the Government Accountability Office (GAO) against the Technology Development contract awards by the Northrop Grumman-Oshkosh team and the Textron-Boeing-SAIC team alleging that there were “unintended discrepancies” in how the government rated bids in terms of the criteria of systems maturity, logistics, and costs.<sup>10</sup> As a result of this protest, work on the JLTV program by the three winning teams was suspended and the JLTV program office expected that it will take GAO 90 to 120 days (February-March 2009 time frame) to complete its investigative report on the protests. On February 17, 2009, GAO rejected the JLTV protests and the stop work orders were lifted.

## **Marines to Opt Out of JLTV Program?<sup>11</sup>**

The Marines are reportedly considering dropping out of the JLTV program because, at its current estimated weight of 20,000 lb., it does not lend itself to Marine Corps expeditionary operations. Marine Corps leadership is concerned that the prototypes shown so far by industry are too heavy to be transported by helicopters and faults industry for failing to stay “apace of the vision” for the JLTV. The Marines do not rule out removing themselves from the program and modifying current vehicles if developers cannot address their specific requirements. The Army is said to be “moving ahead” with the JLTV program, appearing less concerned than the Marines that final JLTV versions might not be CH-47 and CH-53 helicopter and C-130 cargo aircraft transportable. The Army and Marines plan a JLTV program review sometime in June 2009 where vehicle weight concerns will likely be a topic of discussion.<sup>12</sup>

## **United States and Australia Agree on Joint JLTV Development<sup>13</sup>**

In February 2009, the Pentagon and the Australian Department of Defence signed an agreement to coordinate the technology development for the JLTV. Under this agreement, 30 JLTV prototypes will now be developed, with the United States funding the development of 21 prototypes and Australia will fund nine. Australia reportedly has a need for about 1,300 vehicles with requirements similar to the JLTV, although Australian defense officials note that Australia’s participation in JLTV technology development does not automatically mean that they will eventually procure JLTVs. DOD is said to be pursuing similar arrangements with other countries, and negotiations are ongoing with Israel, Canada, and the United Kingdom.

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<sup>10</sup> Marjorie Censer, “Following Northrop’s Lead, Boeing-Boeing Team Files JLTV Protest,” *InsideDefense.com*, November 12, 2008 and Ann Roosevelt, “Textron-Team Protests Army JLTV Awards,” *Defense Daily*, November 13, 2008; and Daniel Wasserbly, “U.S. GAO Rejects JLTV Protests,” *Jane’s Defence Weekly*, February 25, 2009, p. 12 .

<sup>11</sup> Marjorie Censer, “Citing Weight, Commandant Says Marines May Have to Depart JLTV Program,” *InsideDefense.com*, April 29, 2009 and Dan Lamothe, “Weight Issues Aside, Army Sticks With JLTV,” *Army Times*, May 18, 2009.

<sup>12</sup> Marjorie Censer, “Army, Marines to Review JLTV Program in June,” *InsideDefense.com*, May 14, 2009.

<sup>13</sup> Daniel Wasserbly, “U.S. and Australia to Join Forces on JLTV Programme,” *Jane’s Defence Weekly*, March 4, 2009, p. 12 and Marjorie Censer, “DOD Inks Formal JLTV Agreement with Australia; More Partnerships Planned,” *InsideDefense.com*, February 26, 2009.

## **Program Cost and Funding<sup>14</sup>**

DOD has not publically assigned a definitive cost to the JLTV program, suggesting that it is too early in the development process to determine an accurate cost estimate. Some defense and trade analysts suggest that the JLTV program will cost well over \$10 billion and possibly as much as \$30 to \$70 billion, depending on the final cost of the vehicles chosen and the number of vehicles procured.<sup>15</sup> The Army estimates that each JLTV will cost \$418,000, almost 70% higher than the target cost of \$250,000 per vehicle that would have enabled the Army to replace all of its HMMWV's with JLTVs. The Army's current JLTV requirement is 140,709 vehicles, and at the estimated \$418,000 per vehicle cost, the Army may be required to reduce total JLTV acquisition quantities, scale back JLTV capabilities, or find additional funds for the program. One estimate by the Center for Army Analysis suggests that it would require about \$6.7 billion per year to outfit all Army brigades over 15 years with JLTVs.

The FY2008 Budget Request for JLTV was \$82.3 million in Research, Development, Test, and Evaluation (RDT&E) funding, but Congress decreased funding to \$38.5 million because of contract award delays.<sup>16</sup> The FY2009 Budget Request for JLTV was \$ 66.1 million (RDT&E), which was fully funded by Congress.<sup>17</sup>

## **FY2010 JLTV Budget Request<sup>18</sup>**

The FY2010 Budget Request for JLTVs is \$32.1 million for Army Research, Development, Test and Evaluation (RDT&E) and \$58.0 million for Marines Corps RDT&E, for a program total of \$90.1 million. This amount is requested in the Base Budget, and there is no JLTV funding request in the FY2010 Other Contingency Operations (OCO) Budget Request.

## **House Armed Services Committee (HASC) Markup of the FY2010 National Defense Authorization Act (H.R. 2647)<sup>19</sup>**

The HASC recommended \$22.10 million in RDT&E funding—a \$10 million decrease from the President's budget request—for the JLTV program in FY2010.

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<sup>14</sup> Jason Sherman and Daniel G. Dupont, "JLTV Price Tag Drives New Three Step Tactical Vehicle Plan for the Army," *InsideDefense.com*, August 8, 2008.

<sup>15</sup> Andrea Shalal-Esa, "Companies Jockey for Huge U.S. Military Truck Program," *Reuters*, November 12, 2007.

<sup>16</sup> Report 110-434, Conference Report to Accompany H.R. 3222, Department of Defense Appropriations Act for FY2008, November 6, 2007, p. 272.

<sup>17</sup> Duncan Hunter National Defense Authorization Act for FY2009, H.Rept. 110-652, May 16, 2008 and National Defense Authorization Act for FY2009, S.Rept. 110-335, May 12, 2008.

<sup>18</sup> United States Department of Defense Fiscal Year 2010 Budget Request Summary Justification, May 2009.

<sup>19</sup> Information in this section is from HASC Summary on FY2010 National Defense Authorization Markup Summary Tables, June 17, 2009.

## Senate Armed Services Committee (SASC) Markup of the FY2010 National Defense Authorization Act (H.R. 2647)<sup>20</sup>

The SASC recommended cutting a total of \$22 million from FY2010 JLYV RDT&E funding—cutting \$10 million from the Army and \$12 million from the Marines. While the Senate expressed support for the JLTV program, it is concerned that there is a lack of a long-term tactical wheeled vehicle strategy and that lessons learned from the MRAP All-Terrain Vehicle (M-ATV), which is currently under development, should be incorporated into the JLTV program.

## Current JLTV Topics

### JLTVs Versus MRAPs<sup>21</sup>

In late 2007, the Department of Defense (DOD) launched a major procurement initiative to replace most uparmored High Mobility, Multi-Wheeled Vehicles (HMMWVs) in Iraq with Mine-Resistant, Ambush-Protected (MRAP) vehicles by FY2009. MRAPs have been described as providing significantly more protection against IEDs than uparmored HMMWVs. DOD approved the acquisition of 15,858 MRAPs of all categories.<sup>22</sup> When the JLTV program first started in late 2006, the 15,858 MRAP requirement did not exist. The unforecasted procurement of significant numbers of the costly MRAPs has had an impact on the JLTV program. The Army has stated that MRAPs “fill a near-term, urgent joint service requirement for enhanced crew protection” for both the Army and Marines and that JLTVs are the long term solution for the services.<sup>23</sup> While the services do not view the JLTV and MRAP as an “either/or” proposition, some might question the affordability and necessity of maintaining both programs given their overlapping missions and requirements.

DOD’s 2008 decision to acquire a new, lightweight MRAP—the MRAP All-Terrain Vehicle, or M-ATV (in addition to the almost 16,000 MRAPs to be procured by the end of 2009) adds another dimension to the JLTV versus MRAP debate.<sup>24</sup> With anywhere from 2,000 to 10,000 of these new vehicles to be procured, some analysts suggest that the number of JLTVs to be acquired could be offset by these M-ATVs. Senior Army officials suggest that the M-ATV effort will not “clash with JLTV,”<sup>25</sup> but other defense officials note a “striking similarity” between the M-ATVs and JLTVs, suggesting potential redundancies between the two vehicles.<sup>26</sup> Other analysts also

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<sup>20</sup> Information in this section is taken from SASC Press Release, “Senate Armed Services Committee Completes Markup of National Defense Authorization Bill for Fiscal Year 2010,” June 26, 2009 and Marjorie Censer, “Senate Committee Cuts \$22 Million in FY 2010 JLTV Funding,” *Inside Defense.com*, July 6, 2009.

<sup>21</sup> For additional information on MRAPs, see CRS Report RS22707, *Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues for Congress*, by Andrew Feickert.

<sup>22</sup> Marjorie Censer, “DOD Reports More Than 11,000 MRAP Vehicles Already in Theater,” *InsideDefense.com*, August 11, 2008.

<sup>23</sup> Statement of Lieutenant General Stephen M. Speakes before the House Air and Land Forces Subcommittee on the Army Force Protection Program, January 18, 2007, pp. 1-2.

<sup>24</sup> Kris Osborn, “DOD Doubles Potential Buy of Lighter MRAPs,” *Defense News*, November 17, 2008.

<sup>25</sup> Emelie Rutherford, “Speakes: Potential MRAP Lite Effort Won’t Clash With JLTV,” *Defense Daily*, October 9, 2008.

<sup>26</sup> Kris Osborn, “What’s Next for JLTV,” *Defense News*, November 10, 2008.



suggest that a large M-ATV purchase (closer to 10,000 than 2,000) could affect the number of JLTVs that the Army eventually purchases.<sup>27</sup>

## **International Procurement of JLTVs?**

U.S. defense officials have expressed an interest in international involvement in the JLTV program, and to date, Australia, Britain, and possibly Israel and Canada have indicated that they may participate in and fund prototypes during the Technology Development phase.<sup>28</sup> The Pentagon's planned initial purchase of 60,000 JLTVs for the services could be increased if there is international participation in the program. There are concerns, however, that because of some of the advanced technologies that may be incorporated into the JLTV, it may prove to be difficult to obtain export licenses from the State Department.<sup>29</sup> Some believe that Congress, too, could play a role by expressly barring the sale of advanced technology JLTVs to foreign governments, as it did in the recent case of the F-22 *Raptor* aircraft.<sup>30</sup> Others suggest that export problems are not likely to arise in a light vehicle such as the JLTV, noting that HMMWVs have been sold to numerous Asian and Middle Eastern countries.<sup>31</sup> If JLTV export is permitted and countries order significant numbers of JLTVs, the per-vehicle cost could possibly decrease, thereby addressing some of the JLTV affordability concerns raised by U.S. officials.

## **Potential Issues for Congress**

### **JLTV Affordability**

In a recent testimony on DOD weapons programs, the Government Accountability Office (GAO) asserted that total acquisition costs for the FY2007 portfolio of major defense acquisition programs still in the System Development and Demonstration (SDD) phase increased 26% and development costs increased by 40% from first estimates.<sup>32</sup> As previously noted, while still in the Technology Development (TD) phase, the Army now estimates that each JLTV will cost \$418,000—almost 70% higher than the target cost of \$250,000 per vehicle. In comparison with GAO's data, JLTV costs appear to be significantly higher than FY2007 program averages and could possibly increase even more as JLTV progresses through the SDD phase. JLTV's early above-average cost growth may merit greater congressional oversight. With possible foreign involvement in JLTV development and acquisition, there might be potential cost savings that could drive down the per unit cost of JLTVs destined for the U.S. military.

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<sup>27</sup> Kris Osborn, "DOD Double Potential Buy of Lighter MRAPs," *Defense News*, November 17, 2008.

<sup>28</sup> Edmond Lococo and Tony Capaccio, "U.S. Humvee-Replacement Effort May Get Funding from Four Allies," *Bloomberg.com*, October 1, 2008.

<sup>29</sup> Kris Osborn, "DOD's JLTV Becoming International Effort," *Defense News*, August 4, 2008.

<sup>30</sup> In CRS Report RS22684, *Potential F-22 Raptor Export to Japan*, by Christopher Bolkcom and Emma Chanlett-Avery, CRS notes that export of the F-22 has been denied by Congress in FY1998, FY2001, and FY2005. This provision, known as the "Obey Amendment," was debated in the 109<sup>th</sup> Congress, and a move to repeal this amendment in the FY2007 Defense Appropriations bill was blocked by the Senate.

<sup>31</sup> Kris Osborn, "DOD's JLTV Becoming International Effort," *Defense News*, August 4, 2008.

<sup>32</sup> United States Government Accountability Office (GAO) Testimony, *Defense Acquisitions: Results of Annual Assessment of DOD Weapon Programs*, GAO-08-674T, April 29, 2008, p. 2.

## **Marine Corps Concerns with JLTV Weight and Transportability**

Based on reports, there appears to be concern that JLTV prototypes under development may exceed air transportability requirements. Such concerns are not unfounded, given recent experiences in developing MRAPs and with the Army's Future Combat System (FCS)<sup>33</sup> Manned Ground Vehicles, which were originally intended to be C-130 transportable but during design became too large and too heavy to fit on C-130s. Given the Marine's stated concerns about industry losing sight of JLTV's expeditionary requirements, Congress might wish to review the current state of JLTV development with DOD and industry to insure that JLTVs remain both "light" and expeditionary.

## **JLTV and the Army's New Vehicle Modernization Program**

On April 6, 2009, Secretary of Defense Gates announced that he intended to significantly restructure the Army's FCS program.<sup>34</sup> The Department of Defense (DOD) plans to accelerate the spin out of selected FCS technologies to all brigade combat teams (BCTs) but will recommend cancelling the manned ground vehicle (MGV) component of the program, which was intended to field eight separate tracked combat vehicle variants. Secretary Gates was also critical that the FCS program did not include a role for Mine-Resistant, Ambush-Protected (MRAP) vehicles that have been used successfully in current conflicts. After re-evaluating requirements, technology, and approach, DOD will re-launch the Army's Vehicle Modernization Program, including a competitive bidding process. While Army's new Vehicle Modernization Program will likely focus heavily on tracked and wheeled combat vehicles, transport vehicles such as the MRAP, M-ATVs, HMMWVs, and JLTVs will probably also be included. Because of the significance that a new Vehicle Modernization Program will have on Army force structure, operational capabilities, procurement, and budget requirements—not just in terms of the JLTV but all Army vehicles—Congress can be expected to be extensively involved in oversight activities. After DOD and the Army complete their supporting studies, there is no guarantee that the Army's current 140,000 JLTV requirement will be included in the new Vehicle Modernization Program.

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<sup>33</sup> For additional information on the Future Combat System Program, see CRS Report RL32888, *The Army's Future Combat System (FCS): Background and Issues for Congress*, by Andrew Feickert.

<sup>34</sup> Information in this section is taken from a transcript of Secretary of Defense Robert M. Gates Budget Press Briefing, Arlington, VA April 6, 2009.