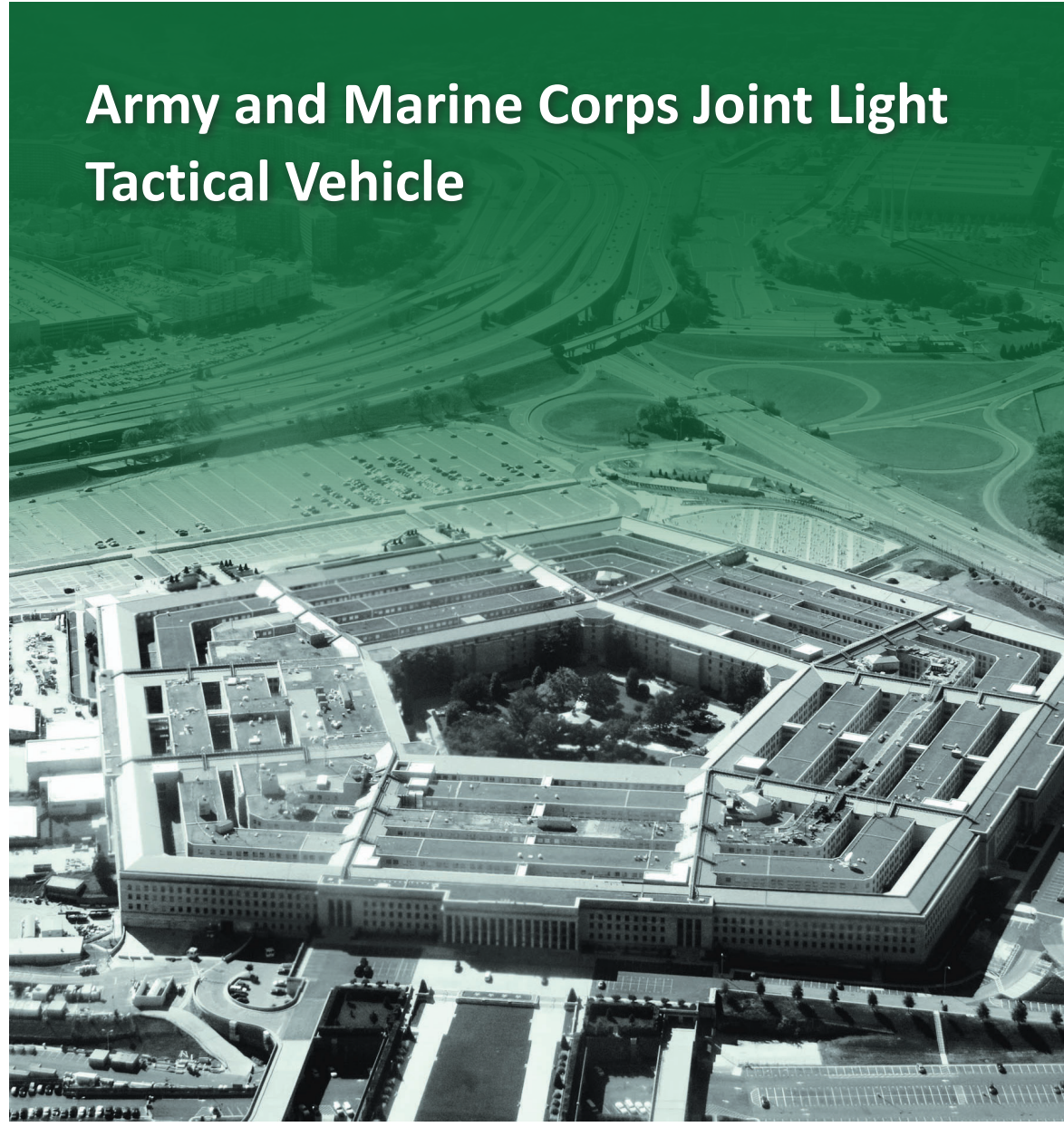


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INSPECTOR GENERAL

U.S. Department of Defense

MAY 2, 2018



Army and Marine Corps Joint Light Tactical Vehicle

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

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INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

Mission

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Vision

Our vision is to be a model oversight organization in the Federal Government by leading change, speaking truth, and promoting excellence—a diverse organization, working together as one professional team, recognized as leaders in our field.



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Results in Brief

Army and Marine Corps Joint Light Tactical Vehicle

May 2, 2018

Objective

We determined whether the Army and Marine Corps developed adequate test plans and demonstrated effective results to prepare the Joint Light Tactical Vehicle (JLTV) program for full rate production.

Background

The JLTV program is a joint Army and Marine Corps acquisition effort developed to replace the High Mobility Multipurpose Wheeled Vehicle. The JLTV program provides the Army and Marine Corps with a general-purpose, light tactical vehicle that is designed to deliver an optimal balance of protection, payload, and performance to enhance the effectiveness of ground combat and supporting forces. The Army and Marine Corps plan to purchase 56,340 JLTVs from FY 2015 to FY 2037. As of December 25, 2017, the JLTV total life-cycle cost estimate is approximately \$48 billion.¹

The JLTV has two variants: a four-seat vehicle that can carry 3,500 pounds, and a two-seat vehicle that can carry 5,100 pounds. The four-seat variant has three mission package configurations—general purpose, heavy guns carrier, and close combat weapons carrier. The two-seat variant has one configuration, the utility/shelter carrier vehicle.

¹ All dollar figures in the report are shown in Base Year 2015, unless otherwise stated.

Finding

(FOUO) The Army and Marine Corps developed adequate test plans but have not demonstrated effective test results to prepare the JLTV program for full rate production. We reviewed eight maintenance-related vehicle performance requirements for the JLTV; of these requirements, the JLTV exceeded the threshold and objective for [REDACTED] requirement, exceeded the threshold for [REDACTED] requirements, but did not meet the threshold for [REDACTED] requirements.²

(FOUO) The requirements developer, the Marine Corps Assistant Deputy Commandant, Combat Development and Integration, has acknowledged and accepted the JLTV test results. Consequently, the requirements developer is not changing requirements, and is choosing not to incorporate the [REDACTED] unmet maintenance-related vehicle performance requirements in the baseline vehicle to maintain program cost and schedule. Despite not meeting all maintenance-related performance requirements, the Joint Program Office estimates JLTV operations and support costs will be reduced by \$8.3 billion due to better fuel usage and better reliability than expected.

In addition, the JLTV requirements developer did not clearly define vehicle [REDACTED] requirements; because of this, [REDACTED]

[REDACTED]

² The objective is the desired operational goal associated with the performance requirement. The threshold is the minimum acceptable operational value. To meet the requirement, the JLTV needed to perform at the requirement's threshold.



Results in Brief

Army and Marine Corps Joint Light Tactical Vehicle

Recommendations

We recommend the Program Executive Officer, Combat Support and Combat Service Support clearly define and address program requirements in future production contracts supporting systems acquisition.

We recommend the Project Manager, Joint Program Office, Joint Light Tactical Vehicles:

- Determine the additional costs required to integrate the selected [REDACTED] into the JLTV.
- Prior to fielding, integrate an [REDACTED] [REDACTED] into all JLTVs.

The Acting PEO CS&CSS, responding for the Project Manager, Joint Program Office, JLTV, stated that program officials plan to equip all JLTVs with an [REDACTED]. Therefore, this recommendation is resolved but remains open. We will close this recommendation when we verify that the [REDACTED] solution is incorporated into the JLTV design before fielding.

Please see the Recommendations Table on the next page.

Management Comments and Our Response

The Acting Program Executive Officer, Combat Support and Combat Service Support, (PEO CS&CSS) responding for the Project Manager, Joint Program Office, JLTV, agreed with our finding and recommendation.

The Acting PEO CS&CSS stated that program officials will incorporate the cost into the appropriate reporting and cost estimating systems to determine and report affordability. Therefore, this recommendation is resolved but remains open. We will close this recommendation when we verify that program officials have determined the costs are affordable and incorporated into the final cost of the JLTV.

Recommendations Table

Management	Recommendation Requiring Comment	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
Program Executive Officer, Combat Support and Combat Service Support	2			
Project Manager, Joint Program Office, Joint Light Tactical Vehicle	None	None	1.a, 1.b	None

Please provide Management Comments by June 1, 2018.

Note: The following categories are used to describe agency management's comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – OIG verified that the agreed upon corrective actions were implemented.





**INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500**

May 2, 2018

MEMORANDUM FOR PROGRAM EXECUTIVE OFFICER, COMBAT SUPPORT AND COMBAT
SERVICE SUPPORT;
PROJECT MANAGER, JOINT PROGRAM OFFICE, JOINT LIGHT
TACTICAL VEHICLE

SUBJECT: Army and Marine Corps Joint Light Tactical Vehicle
(Report No. DODIG-2018-113)

We are providing this report for your review. We conducted this audit in accordance with generally accepted government auditing standards.

We considered comments from Acting Program Executive Officer, Combat Support and Combat Service Support, on the draft of this report when preparing the final report. Comments from the Acting Program Executive Officer, Combat Support and Combat Service Support, responding for the Project Manager, Joint Program Office, JLTV, addressed all the specifics of the recommendations 1.a and 1.b and conformed to the requirements of DoD Instruction 7650.03; therefore, we do not require additional comments for those recommendations. Because of management comments, we redirected the draft report Recommendation 1.c to the Program Executive Office, Combat Support and Combat Service Support, and renumbered it as Recommendation 2. Therefore, we request the Program Executive Officer, Combat Support and Combat Services Support, comment on Recommendation 2 by June 1, 2018.

Please send a PDF file containing your comments to audacs@dodig.mil. Copies of your comments must have the actual signature of the authorizing official for your organization. We cannot accept the /Signed/ symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the cooperation and assistance received during the audit. Please direct questions to me at (703) 604-9312 (DSN 664-9312).

A handwritten signature in black ink, appearing to read "Theresa S. Hull", is positioned above the printed name.

Theresa S. Hull
Assistant Inspector General for
Acquisition, Contracting, and Sustainment

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Introduction

Objective

We determined whether the Army and Marine Corps developed adequate test plans and demonstrated effective results to prepare the Joint Light Tactical Vehicle (JLTV) program for full rate production.

Background

The JLTV program is a joint Army and Marine Corps acquisition effort developed to replace the High Mobility Multipurpose Wheeled Vehicle (HMMWV). The JLTV program provides the Army and Marine Corps with a general-purpose, light tactical vehicle that will deliver the optimal balance of protection, payload, and performance to enhance the effectiveness of ground combat and supporting forces.

The Army and Marine Corps conduct light tactical mobility missions using larger fighting vehicles, such as the Mine Resistant Ambush Protected (MRAP) vehicle or light utility vehicles, such as the HMMWV. However, despite their versatility and transportability, light utility vehicles lack sufficient protection. [REDACTED]

[REDACTED]. In contrast, larger fighting vehicles, such as the MRAP, provide a higher degree of protection. However, these larger fighting vehicles do not meet mobility and transportability requirements because they were not designed to support light tactical mobility missions. The JLTV balances the capabilities of the HMMWV and MRAP by addressing threats and battlefield conditions that pushed the HMMWV beyond its capabilities. Specifically, the JLTV is designed to enhance light tactical mobility missions by providing increased protection, transportability, mobility, sustainment, and networking. Figure 1 shows the HMMWV alongside the JLTV.

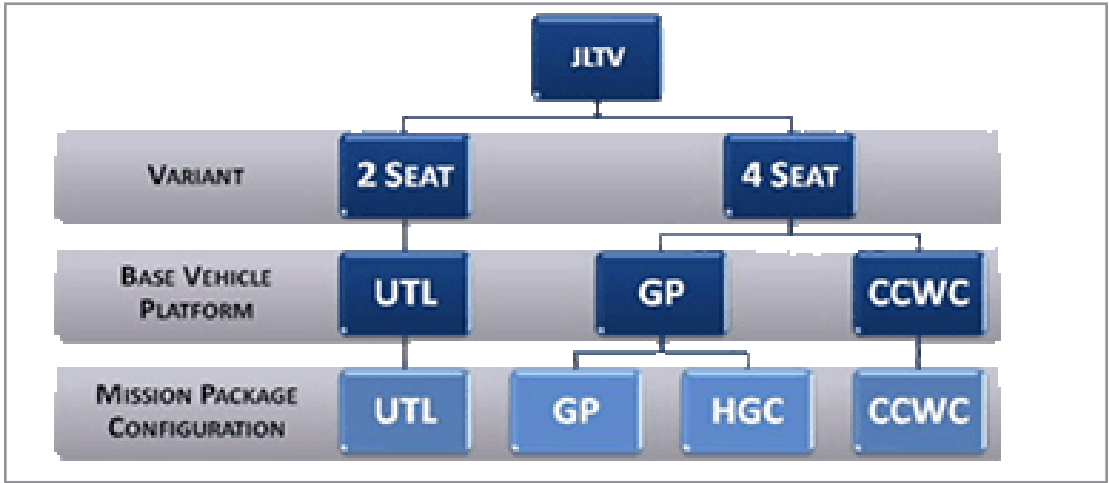


Figure 1. HMMWV Alongside the JLTV
Source: Air Force.

JLTV Description

The JLTV family of vehicles is comprised of two vehicle variants—a four-seat and a two-seat variant—as well as a companion trailer. The vehicle variants may be further equipped with various mission package configurations. The four-seat variant has a payload capacity of 3,500 pounds with three available configurations—general purpose, heavy guns carrier, and close combat weapons carrier. The two-seat variant has a payload capacity of 5,100 pounds and has one configuration, the utility/shelter carrier vehicle. Figure 2 shows the JLTV family of vehicles variants and configurations. Figure 3 shows the JLTV family of vehicles.

Figure 2. JLTV Family of Vehicles Variants and Configurations



Source: Joint Program Office Joint Light Tactical Vehicle.
UTL: Utility/Shelter Carrier
GP: General Purpose
CCWG: Close Combat Weapons Carrier
HGC: Heavy Guns Carrier



Figure 3. JLTV Family of Vehicles
Source: Department of Defense.

Program Management

The Joint Program Office (JPO) for the JLTV manages the program under the supervision of the Program Executive Office for Combat Support and Combat Service Support. The Marine Corps Deputy Commandant, Combat Development and Integration, is the requirements developer. The Assistant Secretary of the Army for Acquisition, Technology, and Logistics is the milestone decision authority. The JLTV is a joint Army and Marine Corps acquisition category 1C program. According to DoD guidance, an acquisition category 1C program:

- is designated by the milestone decision authority as a Major Defense Acquisition Program;
- has a milestone decision authority that is the head of the DoD Component or, if delegated, the Component Acquisition Executive;
- has eventual total expenditures estimated to exceed \$480 million in FY 2014 constant dollars for research, development, test, and evaluation; or
- has eventual total expenditures estimated to exceed \$2.79 billion in FY 2014 constant dollars for procurement.³

The JLTV program entered into the production and deployment phase of the acquisition life cycle in August 2015. The production and deployment phase, also called Milestone C, is comprised of four distinct activities:

1. Initial Production: Initial production establishes an adequate and efficient manufacturing capability for the system, provides test units for operational test and evaluation, and identifies and resolves any deficiencies prior to final production.
2. Operational Test and Evaluation (OT&E): OT&E is conducted in a realistic environment to determine whether the program is operationally effective, suitable, and survivable. OT&E results help the milestone decision authority make the final production decision.
3. Final Production Decision: The milestone decision authority conducts a review to assess the results of the OT&E, initial manufacturing, and limited deployment. The program must demonstrate control of the manufacturing process, acceptable performance and reliability, and the establishment of adequate sustainment and support systems before approval to begin final production is granted.

³ A major defense acquisition program (MDAP) is an acquisition program estimated to achieve the statutorily defined MDAP cost threshold, or is designated as an MDAP by the defense acquisition executive. DoD Instruction 5000.02, "Operation of the Defense Acquisition System," February 2, 2017.

4. Final Production: The remaining production or deployment of the product is completed during final production, which leads to full operational capability.

In August 2015, the JLTV program began initial production and is scheduled to begin multi-Service OT&E in February 2018. The final production decision for the JLTV program is scheduled for December 2018.

Program Costs and Procurement Efforts

The Army and Marine Corps plan to purchase 56,340 JLTVs from FY 2015 to FY 2037. The Army plans to purchase 49,099 JLTVs to replace approximately one-third of their existing light tactical vehicle fleet, which will combine with the remaining HMMWV fleet to meet its light tactical mobility requirements. From FYs 2015 to 2023, the Marine Corps plans to purchase 7,241 JLTVs.

As of December 25, 2017, the JLTV total life-cycle cost estimate is \$48 billion.⁴ This figure includes total estimated expenditures of \$930.7 million for research, development, test, and evaluation; \$19.4 billion for procurement; and \$27.6 billion for operations and support (O&S).

Review of Internal Controls

DoD Instruction 5010.40 requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls.⁵ The JLTV internal controls were effective as they applied to the audit objectives. We will provide a copy of the final report to the senior official responsible for internal controls in the Army and Marine Corps.

⁴ Joint Light Tactical Vehicle Defense Acquisition Executive Summary Report, December 25, 2017. All dollar figures in the report are shown in base year 2015, unless otherwise stated.

⁵ DoD Instruction 5010.40, "Managers' Internal Control Program Procedures," May 30, 2013.

Finding

The Army and Marine Corps Developed Adequate Test Plans and Have Begun Developing an [REDACTED] [REDACTED] for the JLTV Prior to Full Rate Production

(FOUO) The Army and Marine Corps developed adequate test plans but have not demonstrated effective test results to prepare the JLTV program for full rate production. We reviewed eight maintenance-related vehicle performance requirements for the JLTV; of these requirements, the JLTV exceeded the threshold and objective for [REDACTED] requirement, exceeded the threshold for [REDACTED] requirements, but did not meet the threshold for [REDACTED] requirements.⁶

(FOUO) The requirements developer, the Marine Corps Assistant Deputy Commandant, Combat Development and Integration, has acknowledged and accepted the JLTV test results. Consequently, the requirements developer is not changing requirements, and is choosing not to incorporate the [REDACTED] unmet maintenance-related vehicle performance requirements in the baseline vehicle to maintain program cost and schedule. Despite not meeting all maintenance-related performance requirements, the Joint Program Office estimates JLTV operations and support costs will be reduced by \$8.3 billion due to better fuel usage and better reliability than expected.

In addition, the JLTV requirements developer did not clearly define vehicle [REDACTED] requirements; because of this, [REDACTED]

[REDACTED]. [REDACTED]
[REDACTED]
[REDACTED]. [REDACTED]
[REDACTED]
[REDACTED].

⁶ The objective is the desired operational goal associated with the performance requirement. The threshold is the minimum acceptable operational value. To meet the requirement, the JLTV needed to perform at the requirement's threshold.

Adequate Test Plans Developed

The JPO developed adequate test plans to prepare the JLTV for full rate production. DoD Instruction 5000.02 requires the test and evaluation master plan (TEMP) to be updated at the initial production decision, which occurred on August 25, 2015.⁷ According to officials for the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation, the Defense Acquisition Board waived the requirement for the JLTV TEMP to be approved before the initial production decision because the Army wanted to reduce the scope of testing.

Following the award of the initial production contract, the test community reduced the scope of the TEMP to more accurately address the testing needs for the vehicle.⁸ Testing officials stated that prior to the initial production decision, during the JLTV contract competition, the TEMP featured a broad scope to address the testing needs for three competing JLTV designs. Upon award of the initial production contract, the Army narrowed the scope of the TEMP to save costs and leverage results from developmental testing. The Deputy Assistant Secretary of Defense for Developmental Test and Evaluation and the Director, Operational Test and Evaluation, approved the reduced scope of the TEMP in July 2016.

JLTV Performance Requirements

The Army and Marine Corps have not demonstrated effective results to prepare the JLTV for full rate production. We reviewed eight maintenance-related JLTV performance requirements that are monitored and tracked by the JPO.

- **Operational Availability** is the degree to which one can expect a piece of equipment or weapon system to work properly when required.
- **Mean Miles Between Operational Mission Failure (MMBOMF)** is the total operating miles divided by the total number of operational mission failures.
- **Mean Miles Between Hardware Mission Failure (MMBHMf)** is a subset of MMBOMF that includes mission failures chargeable to contractor furnished equipment and contractor technical and operator manuals.
- **Maintenance Ratio (MR)** is the measure of the maintenance manpower required to maintain the JLTV in an operational environment.

⁷ DoD Instruction 5000.02, "Operation of the Defense Acquisition System," January 7, 2015, Incorporating Change 2 Effective February 2, 2017.

⁸ Test Community refers to officials from: Director, Operational Test and Evaluation; Deputy Assistant Secretary of Defense Developmental Test and Evaluation; JPO JLTV; Program Executive Officer, Combat Support and Combat Service Support; Program Executive Officer, Land Systems Marine Corps; Army Test and Evaluation Command; and Director, Marine Corps Operational Test and Evaluation Activity.

- **Mean Time To Repair (MTTR)** is the sum of time to perform corrective maintenance divided by the total number of corrective maintenance actions during a given period of time.
- **Mean Miles Between Essential Function Failure (MMBEFF)** represents the frequency that the JLTV would be unable to fully perform any essential function at or above requirements. EFF is any incident or malfunction of the vehicle that causes (or could have caused) the loss of one or more essential functions or degradation of an essential function below specified levels.
- **Fuel Efficiency while the vehicle is moving** is measured in ton-miles per gallon and is equivalent to a ton of payload moved.
- **Fuel Efficiency at idle** is the amount of fuel the vehicle uses while idling.

(See the Glossary on page 44 for additional explanations of each term).

Operational availability is the most significant of the eight maintenance-related performance requirements because it is part of the JLTV's primary requirement for vehicle sustainment. A decrease in operational availability affects sustainability, which could lead to an increase in O&S costs. Two of the other requirements, MR and MMBOMF, can affect the operational availability of the JLTV because they are used in the operational availability calculation. The capability production document (CPD) indicates that the MMBOMF is a secondary requirement and that the MR is a performance attribute, which means the MR and MMBOMF are less important than a primary requirement, such as operational availability.

(FOUO) Of the eight maintenance-related vehicle performance requirements, the JLTV exceeded the threshold and

objective for [REDACTED] requirement, exceeded the threshold for [REDACTED] requirements, but did not meet the threshold for [REDACTED] requirements.

We reviewed JLTV test results from two scoring conferences—scoring conference four (SC4), which was held on August 30, 2017, and SC5, which was held on September 28, 2017.

A scoring conference is held to review, classify, and record data from system tests to assess reliability, availability, and maintainability

requirements. We compared results from SC4 and SC5 to the requirements described in the JLTV CPD and the purchase description (PD). A CPD specifies capability requirements for the production of a system. The PD provides detailed

(FOUO) The JLTV exceeded the threshold and objective for [REDACTED] requirement, exceeded the threshold for [REDACTED] requirements, but did not meet the threshold for [REDACTED] requirements.

(FOUO) requirements or specifications to the contractor. The CPD and PD generally contain a minimum threshold and maximum objective value, or goal, for each requirement. See Table 1 for a summary of the results and how performance related to requirements values.

(FOUO) Table 1. Comparison of Observed Performance and Performance Requirements

(FOUO) Requirements	SC4	SC5	CPD Threshold	CPD Objective	PD Threshold	PD Objective
Operational Availability (Percent)						
MMBOMF (Miles)						
MMBOMF (Miles)						
Fuel Efficiency (ton-mpg)						
Fuel Efficiency Idle (gallons/hour)						
MR						
MTTR (Hours)						
MMBEFF (Miles)						

Green Boxes: Exceeded the performance objective and threshold.
Yellow Boxes: Met or exceeded the performance threshold, but did not meet the performance objective.
Red Boxes: Did not meet the performance threshold.
Grey Boxes: There was no requirement identified in the document.

(FOUO) As described in Table 1, [REDACTED] exceeded the CPD and PD threshold and objective in both scoring conferences. The [REDACTED] exceeded the CPD threshold and was approaching the CPD objective. However, the [REDACTED] was approximately [REDACTED] higher than the CPD requirement of [REDACTED]. While the JLTV did not meet the [REDACTED] requirement, [REDACTED] still exceeded the requirement objective, and therefore has not increased O&S costs.

(FOUO) The [REDACTED] [REDACTED] met the requirements listed in the PD and CPD respectively, while [REDACTED] and [REDACTED] did not. The SC data identified that it took [REDACTED] to perform maintenance tasks, which was [REDACTED] the requirement limit. In addition, the SC data identified that the JLTV [REDACTED] [REDACTED]. The JLTV is required to drive [REDACTED]

(FOUO) before an [REDACTED] occurs. The SC data indicated mileage [REDACTED] than the requirement—[REDACTED] occurred after [REDACTED] and [REDACTED] driven. However, [REDACTED] continues to [REDACTED] the requirement goal of [REDACTED] percent, even though the JLTV [REDACTED] these requirements, because the requirements [REDACTED] to calculate operational availability or their weight in the calculation [REDACTED] that operational availability [REDACTED].

(FOUO) The JPO and JLTV requirements developer are aware that the vehicle has not yet met [REDACTED] maintenance-related performance requirements. [REDACTED] of these requirements, [REDACTED] and [REDACTED], are described in the CPD and [REDACTED], is described in the PD. On May 16, 2017, the Marine Corps Assistant Deputy Commandant, Combat Development and Integration, the JLTV requirements developer, acknowledged and accepted that the [REDACTED] CPD requirements would not be incorporated in the baseline vehicle so that the program can maintain cost and schedule projections. JPO officials stated that the requirements developer accepted that all [REDACTED] requirements [REDACTED]. As a result, JPO will [REDACTED] include these requirements in the baseline vehicle. The Chief of Transportation, Army Transportation Corps, stated the Army Training and Doctrine Command is committed to working with the JPO to meet these requirements in the future when the technology is available and affordable.

Operations and Support Cost Estimates Reduced

The JPO has reduced estimated O&S costs by \$8.3 billion. According to SC5 results, the JLTV O&S costs are estimated to be \$26.6 billion, which is below the JPO's goal of \$34.9 billion. JPO officials stated that the estimated decrease in O&S costs was due to increased fuel efficiency and improved reliability test results. According to the CPD, the O&S costs, which are a significant portion of life-cycle costs, are controlled through limits set in the acquisition program baseline to ensure the JLTV is affordable to maintain. This O&S goal of \$34.9 billion reflects Army and Marine Corps O&S costs for 56,340 vehicles over a 20-year span of peacetime operations, which the Army estimates will decrease to \$26.6 billion, resulting in a savings of \$8.3 billion.

The JLTV Does [REDACTED]

The [REDACTED] configurations of the JLTV do [REDACTED]

[REDACTED]⁹ [REDACTED]

⁹ [REDACTED]

[REDACTED]. According to JPO officials, the contractor changed the [REDACTED] [REDACTED] to save costs, which [REDACTED]. JPO officials stated that this change was made as part of the contractor's initial production contract proposal, which was accepted by the government when the contract was awarded.

Army Test and Evaluation Command (ATEC) officials stated that [REDACTED] the JLTV [REDACTED]. According to Army officials, some test events require the JLTV to be driven into remote areas. [REDACTED] [REDACTED]. Therefore, ATEC officials stated that they developed a temporary solution to provide testers with an [REDACTED] to complete testing. During testing, ATEC officials [REDACTED]; however, the JPO has not determined that [REDACTED] will be a permanent [REDACTED] solution.

Requirements Were Unclear

The JLTV requirements developer did not clearly define the [REDACTED] requirement in the CPD. The JLTV is required to have an alternate [REDACTED]

[REDACTED]. According to ATEC officials, the contractor misinterpreted the requirement to mean [REDACTED]

The JLTV requirements developer did not clearly define the [REDACTED] requirement in the CPD.

The JLTV is also required to have [REDACTED] [REDACTED]. However, the requirement for [REDACTED] does not clearly address the need for [REDACTED] [REDACTED].

Unclear requirements allowed the contractor to remove the [REDACTED] as part of their initial production contract proposal. According to JPO officials, the contractor changed the [REDACTED] to save costs because it is a lower tiered requirement. JPO officials stated that vehicle

requirements were tiered to provide flexibility for competition during the source selection process. The highest tiered requirements apply to the entire family of vehicles and include primary and secondary requirements such as mobility, transportability, payload, protection, and reliability. The highest tiered requirements are not tradeable and will be verified during testing. Lower tiered requirements are required capabilities to achieve the full military utility of specific variants of the vehicle, but are below the significance of the highest tiers.

In August 2016, JPO officials evaluated the risk [REDACTED]. The risk was initially rated as medium, and the [REDACTED]. During testing in early 2017, ATEC officials developed a temporary [REDACTED] solution by [REDACTED]. JPO and ATEC concerns led the JPO to direct the contractor to develop a permanent solution for an [REDACTED].

Notice of Concern Memorandum and Actions Taken by the Joint Program Office

During the audit, we identified the [REDACTED] for the JLTV. On September 26, 2017, we notified JPO officials of our concerns in a Notice of Concern Memorandum (see Appendix B for the memorandum). The JPO responded to the memorandum and described the actions taken by the Army and Marine Corps to address our concerns.

The JPO and contractor met on September 26, 2017 to discuss potential solutions for [REDACTED]. The JPO modified the JLTV contract to allow the contractor to develop the [REDACTED] at no cost to the Government. According to JPO officials, once the solution is tested, it will be integrated into production vehicles through an engineering change proposal. As part of the contract modifications, [REDACTED] will be provided to the Government for vehicles that will undergo multi-Service OT&E, which is scheduled to begin in February 2018. Once the JPO reviews test results from the [REDACTED], the JPO will assess the production and retrofit costs. Following the assessment, the JPO will determine if the [REDACTED] will be accepted as is, if modifications need to be made, or if a different [REDACTED] will be sought due to other factors, such as high retrofit costs or additional weight. The JPO will modify the JLTV contract to integrate the final tested [REDACTED] into initial production vehicles following multi-Service OT&E. The [REDACTED] is planned to be fully integrated into the production vehicles prior to fielding.

If the Army and Marine Corps had clearly defined the JLTV requirement to include an [REDACTED], efforts to integrate a solution during the initial production might not have been necessary and additional costs could have been avoided. Following testing of the [REDACTED], the JPO should determine any additional costs required to integrate the [REDACTED], should determine whether those costs are affordable, and, prior to fielding, should ensure all JLTVs are equipped with an [REDACTED]. In addition, the JPO should clearly define and address program requirements in future contracts supporting systems acquisition.

Suggested Actions, Management Comments, and Our Response

During the audit, we notified the Project Manager, Joint Program Office, JLTV, in a memorandum that the [REDACTED] (See Appendix B). We suggested that management:

1. establish an [REDACTED] requirement for [REDACTED];
2. integrate the [REDACTED] into the vehicle prior to beginning multi-Service OT&E; and
3. determine the impact of the solution on JLTV costs.

Project Manager, Joint Program Office, JLTV, Comments

The Project Manager, Joint Program Office, JLTV, responded to the suggested actions. He stated that a requirement for an [REDACTED] exists and was the basis for developing an [REDACTED]. He also stated that the JPO is committed to ensuring all vehicles have an [REDACTED] prior to fielding and has executed a contract modification to ensure all vehicles will have an [REDACTED] solution prior to beginning multi-Service OT&E. Additionally, the Project Manager stated that production cost estimates will be determined as part of the development of the [REDACTED] and will be incorporated into the appropriate cost estimates and reports.

Our Response

The Project Manager, Joint Program Office, JLTV, has not completed all suggested actions. Prior to fielding, the Project Manager should ensure that all JLTVs are equipped with [REDACTED] and should also determine any additional costs required to integrate the [REDACTED].

Management Comments on the Finding and Our Responses

The Acting Program Executive Officer, Combat Support and Combat Service Support, provided comments on the report and recommendations. For the full text of the Acting Program Executive Officer's comments, see the Management Comments section of the report in Appendix C.

Program Executive Office, Combat Support and Combat Service Support Comments

The Acting Program Executive Officer, Combat Support and Combat Service Support, stated the DoD OIG report is a snap shot in time and included two attachments as part of its response. Attachment 1 of the response is a Comment Resolution Matrix, which according to the Acting Program Executive Officer, Combat Support and Combat Service Support, included updated program details, dollar figures, and quantities. Appendix D contains the Comment Resolution Matrix and our responses to each comment. As detailed in Appendix D, we addressed the comments and revised the report, where appropriate.

The Acting Program Executive Officer also stated that Attachment 2 included the updated performance status of the maintenance requirements. The Acting Program Executive Officer stated that the JLTV CPD requirements were tiered to provide competition in support of the approved acquisition strategy and source selection process. This allowed the contractor to trade non-primary and secondary requirements to achieve an optimal balance between performance and cost.

(FOUO) The Acting Program Executive Officer, Combat Support and Combat Service Support, further stated the [REDACTED] had a purchase description requirement threshold to achieve [REDACTED], which was [REDACTED] along with the CPD requirements for [REDACTED] and [REDACTED]. The Acting Program Executive Officer stated that the Joint Program Office is [REDACTED]

The Acting Program Executive Officer also provided updated maintenance related scores which included scores from Scoring Conference 7.

The Acting Program Executive Officer provided a comprehensive history on the [REDACTED]. The Acting Program Executive Officer stated that the Joint Project Office, JLTV, is committed to ensuring all vehicles will either have [REDACTED] prior to fielding. The Acting Program Executive Officer further stated that the JLTV vehicles used for multi-operational test and evaluation are equipped with an initial [REDACTED].

Our Response

~~(FOUO)~~ The updated maintenance-related performance requirement results did not change any conclusions within this report. According to the Acting Program Executive Officer's comments, the [REDACTED] threshold requirement of [REDACTED] was included in the 2015 purchase description. The May 2016 purchase description does not reference this requirement or address that the contractor traded the requirement. The May 2016 purchase description provided the objective value of [REDACTED], and there is no other indication within the purchase description as to why the [REDACTED] [REDACTED]. Therefore, we maintain in the report that the [REDACTED] purchase description requirement is [REDACTED], which according to Scoring Conference 4 and 5 data, the JLTV [REDACTED].

Recommendation, Management Comments, and Our Response

Recommendation 1

We recommend the Project Manager, Joint Program Office, Joint Light Tactical Vehicles:

- a. **Determine the additional costs required to integrate the selected [REDACTED] into the JLTV and determine whether those costs are affordable.**

Program Executive Office, Combat Support and Combat Service Support Comments

The Acting Program Executive Officer, Combat Support and Combat Service Support, responding for the Project Manager, Joint Program Office, JLTV, agreed with the recommendation. Specifically, the Acting Program Executive Officer stated that the program will incorporate the [REDACTED] cost into the appropriate reporting and cost estimating systems to determine and report affordability. Based on the efforts performed by the Joint Program Office and the contractor, the program office estimates the [REDACTED] will not cause a cost breach.

Our Response

The response addressed all specifics of the recommendation; therefore, the recommendation is resolved, but remains open. We will close this recommendation once we verify that program officials have determined the [REDACTED] costs are affordable and incorporated into the final cost of the JLTV.

b. Prior to fielding, equip all JLTVs with an [REDACTED].

Program Executive Office, Combat Support and Combat Service Support Comments

The Acting Program Executive Officer, Combat Support and Combat Service Support, responding for the Project Manager, Joint Program Office, JLTV, agreed with the recommendation. Specifically, the Acting Program Executive Officer stated that the Joint Program Office, JLTV, remains committed to equipping all JLTVs with an [REDACTED] prior to the scheduled JLTV fielding, expected by the end of the second quarter of fiscal year 2019.

Our Response

The response addressed all specifics of the recommendation; therefore, the recommendation is resolved, but remains open. We will close this recommendation once we verify that the [REDACTED] is incorporated into the JLTV before fielding.

Recommendation 2

We recommend the Program Executive Officer, Combat Support and Combat Service Support clearly define and address program requirements in future contracts supporting systems acquisition.

This recommendation was previously addressed to the Project Manager, Joint Program Office, JLTV, as Recommendation 1.c of the draft report. This recommendation was not limited to the JLTV program, but intended to impact all future acquisition programs and future contracts for those programs that the Program Executive Officer, Combat Support and Combat Service Support, has oversight authority. Therefore, we redirected this recommendation to the Program Executive Officer, Combat Support and Combat Service Support, and renumbered it as Recommendation 2. We request the Program Executive Officer, Combat Support and Combat Services Support, comment on this recommendation.

Appendix A

Scope and Methodology

We conducted this performance audit from May 2017 through January 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We collected and reviewed documents dated from January 2012 to November 2017. We reviewed and analyzed acquisition documents and test results to determine if the Army and Marine Corps developed adequate test plans and demonstrated effective results to prepare the JLTV program for full rate production.

In addition, we interviewed officials from:

- Office of the Deputy Assistant Secretary of Defense, Developmental Test and Evaluation;
- Director, Operational Test and Evaluation;
- Army Test and Evaluation Command; and
- Joint Program Office, JLTV.

We also reviewed the following documents:

- DoD Instruction 5000.02, "Operation of the Defense Acquisition System," August 10, 2017
- Test and Evaluation Master Plan, Milestone C
- Capability Production Document
- Capability Development Document
- JLTV Purchase Description
- JLTV Defense Acquisition Executive Summary Reports

Use of Computer-Processed Data

We used computer-processed data to perform this audit. Specifically, we used Defense Acquisition Executive Summary reports retrieved from the Defense Acquisition Management Information Retrieval System data repository. The Defense Acquisition Management Information Retrieval System identifies various data sources that the Acquisition community uses to manage MDAP and

Major Automated Information Systems programs and provides a unified web-based interface to present that information. The audit team's use of computer-processed data does not materially affect the audit findings, conclusions, or recommendations. The computer-processed data used originated from the best available source, and it is neither practical nor necessary to conduct procedures to verify the data.

Prior Coverage

During the last 5 years, the Government Accountability Office (GAO) and the DoD Office of Inspector General (DoD OIG) each issued one report discussing the JLTV.

Unrestricted GAO reports can be accessed at <http://www.gao.gov>. Unrestricted DoD OIG reports can be accessed at <http://www.dodig.mil/pubs/index.cfm>.

GAO

Report No. GAO-12-859, "Industrial Base: U.S. Tactical Wheeled Vehicle Manufacturers Face Period of Uncertainty as DoD Purchases Decline and Foreign Sales Potential Remains Unknown," September 2012

According to this report, the U.S. tactical wheeled vehicle industrial base includes seven manufacturers that use common suppliers of major subsystems, such as engines and armor. Four of these manufacturers reported that their reliance on sales to the DoD varies because they also produce commercial vehicles or parts. Collectively, the seven manufacturers supplied the DoD with over 158,000 tactical wheeled vehicles to meet wartime needs from fiscal years 2007 through 2011. The DoD, however, plans to return to pre-war purchasing levels, buying about 8,000 tactical wheeled vehicles over the next several years because of fewer requirements. The GAO did not make any recommendations in this report.

DoD OIG

Report No. DODIG-2014-125, "Army and Marine Corps Program Officials Appropriately Assessed the Affordability of the Joint Light Tactical Vehicle Program," September 30, 2014

The report found that Army and Marine Corps officials appropriately assessed the affordability of the JLTV program in accordance with DoD policies and procedures, prior to the program entering the engineering and manufacturing development phase. The DoD OIG did not make any recommendations in this report.

Appendix B

Notice of Concern and Management Response



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INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

September 26, 2017

MEMORANDUM FOR JOINT PROJECT MANAGER, JOINT LIGHT TACTICAL VEHICLES

SUBJECT: [REDACTED] Identified During the Audit of the Army and Marine Corps Joint Light Tactical Vehicle (Project No. D2017-D000AU-0150.000)

This memorandum is being issued from an ongoing audit that is being conducted in accordance with generally accepted government auditing standards. The work conducted on this audit is preliminary. There is additional work ongoing to satisfy the audit objective. This memorandum, management comments, and actions taken during the course of the audit in response to the suggested actions will be included in the final report. Please respond to these suggested actions or provide actions taken within 5 working days of the issuance of this memorandum.

Our overall audit objective is to determine whether the Army and Marine Corps developed adequate test plans and demonstrated effective results to prepare the Joint Light Tactical Vehicle (JLTV) program for full rate production. During the subject audit, we identified a [REDACTED] for the JLTV. Specifically, Army officials stated that the JLTV does [REDACTED]

[REDACTED] The Joint Project Office has not clearly defined the requirement for [REDACTED]

[REDACTED] The implementation of this requirement may prevent future [REDACTED] to the warfighter. We are providing this memorandum for your comments and action before the completion of the audit.

[REDACTED] Joint Project Office officials stated that during the initial production phase, the [REDACTED] to save costs. According to Army test officials, [REDACTED] because the JLTV [REDACTED] requirement was misinterpreted by the contractor and the Joint Project Office. The capability production document has two requirements related to [REDACTED]. However, after reviewing the requirements documents, we concluded the requirement for [REDACTED].

Requirements Unclear

The JLTV is required to provide an alternate [REDACTED]. According to Army test officials, the contractor misinterpreted the requirement to mean [REDACTED] and did not account for the possibility of [REDACTED]. A [REDACTED]

[REDACTED] However, the requirement states that the [REDACTED]

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The JLTV is also required to have [REDACTED]

[REDACTED]

Government Test Community

The Government test community will not test the JLTV [REDACTED]. According to Army test officials, some test events require the JLTV to be driven into remote areas. [REDACTED]

[REDACTED] Army test officials stated that [REDACTED] to complete testing. This should allow for [REDACTED]. However, [REDACTED] been determined to be a permanent [REDACTED] solution.

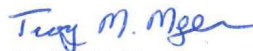
Joint Project Office Actions to Address [REDACTED]

On August 31, 2017, we discussed [REDACTED] requirements with Joint Project Office officials. The Joint Project Office officials stated they planned to discuss potential solutions for [REDACTED] on September 26, 2017.

We suggest that the Joint Project Manager, JLTV:

- Establish an [REDACTED] requirement for [REDACTED].
- Integrate the [REDACTED] solution to the vehicle prior to beginning multi-service operational test and evaluation.
- Determine the impact of the solution on JLTV costs.

Therefore, we request that you apprise us of all corrective actions you take or have taken to address the suggested actions by October 3, 2017. Please contact [REDACTED] or [REDACTED].



Mr. Troy M. Meyer
Principal Assistant Inspector General
for Audit

[REDACTED]

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Notice of Concern and Management Response

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(U) INFORMATION PAPER

SFAE-CSS-JL

27 September 2017

Subject: Department of Defense Inspector General (DODIG) [REDACTED] Concerns Identified During the Audit of the Army and Marine Corps Joint Light Tactical Vehicle (JLTV)

1. Purpose: To provide DODIG an update on JPO JLTV plans for [REDACTED] on JLTV

2. Background:

a. On September 26, 2017 DODIG issued a Memorandum For Joint Project Manager, Joint Light Tactical Vehicle in regards to the "[REDACTED] Concerns Identified During the Audit of the Army and Marine Corps Joint Light Tactical Vehicle (Project No. D2017-D000AU-0150.000)". The notification requested the Joint Program Office provide an update on all corrective actions that will be taken and have been taken to address the memorandum's suggested actions by October 3, 2017. The three suggestions listed were:

1. Establish an [REDACTED] requirement for [REDACTED]
2. Integrate the [REDACTED] to the vehicle prior to beginning multi-service operational test and evaluation
3. Determine the impact of the solution on JLTV costs

b. Facts

1. JROC Validated CPD for [REDACTED] is a Tier 3 (Important) Attribute.
 - i. Tier 3 attributes are noted in Section 5.3 of the CPD as capabilities required to achieve the full military utility of the vehicle, but below the significance of Tiers 1 (Key Performance Parameters / Key System Attributes) and Tier 2 (Fundamental).
 - ii. Section 5.3.3.3 provides the CPD requirements for [REDACTED].
 - iii. Combat Developers acknowledged the JLTV CPD requirements were tiered to provide trade space for competition in support of the JLTV Acquisition Strategy and source selection process. Highest tier (Key Performance Parameter / Key System Attributes) requirements like mobility, transportability, payload, protection, and reliability are not tradable and will be verified as part of on-going Production and Deployment (PD) phase testing. Traded, lower tiered requirements would be assessed by US Army and USMC Combat Developer representatives as part of standing JLTV Requirements Management and Analysis Process (RMAP).
2. JPO JLTV, with coordination with the Combat Developers decomposed Section 5.3.3.3 of the CPD into 13 requirements captured in the JLTV

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Purchase Description Family of Vehicles (PDFOV) and released in the Low Rate Initial Production (LRIP) Request for Proposal (RFP).

- i. [REDACTED] as part of their proposal solution, traded the PDFOV Tier 3 requirement [REDACTED].

- 3. JPO JLTV Risk Assessment Board (RAB) initiated risk [REDACTED] on August 30, 2016. The subject risk was initially rated as Medium, with at least one [REDACTED] under an STS Work Directive to lower the risk.
- 4. An STS [REDACTED] Study, and ECP, Work Directive was approved for development by the Program Manager in February 2017.
- 5. Pending ECP for [REDACTED], Army Test and Evaluation Command (ATEC) coordinated with JPO JLTV on Developmental Test hardware solutions to ensure test operators would have an additional [REDACTED]. YTC solution was agreed on February 3, 2017 and ATC solution was agreed on March 8, 2017.

c. JPO JLTV communications to DODIG on the subject:

- 1. Email, August 7, 2017 to DODIG Audit Team in response to the question "What will be the final configuration for the [REDACTED] on the [REDACTED] JLTV?"
 - i. JPO JLTV response: "The JPO is performing a System Technical Support (STS) Work Directive to develop an [REDACTED] for the [REDACTED] JLTV. When the details on the solution, cost and schedule are finalized the program office will make an informed decision on production and associated retrofit."
- 2. Email, August 16, 2017 to DODIG Audit Team in response to the question "What is the projected configuration decision date for the [REDACTED]?"
 - i. JPO JLTV response: "The projected configuration date will be 25 Sep 2017 at the Start of Work Meeting (SOWM), which also consists of a design decision review meeting to determine the [REDACTED] configurations. After these meetings, the Engineering Change Proposal (ECP) will be developed and submitted for review and potentially acceptance (pending assessment of costs and performance). The current estimate for initial ECP submission for Government review is early March 2018."
- 3. Teleconference, August 31, 2017 between the JPO JLTV operations at Quantico and the DODIG Audit team to the question "What is the Marine Corps' opinion on the [REDACTED] on the JLTV?"
 - i. JPO JLTV response: "The USMC supports a means of [REDACTED] as a requirement. There is a System Technical support (STS) Work Directive that is looking into addressing this. The Start of Work Meeting for this effort will occur September 2017. The efforts will lead to the development of an Engineering Change Proposal for review."

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The current estimate for initial ECP submission for Government review is early March 2018. When the details on the solution, cost and schedule are finalized the JPO will make an informed decision on production and associated retrofit."

4. Teleconference, September 26, 2017 between [REDACTED] and DPM JPO JLTV on the status of the Start of Work Meeting that was identified in the August 16th email as projected on September 25th.
 - i. JPO JLTV Response: Will need to verify the SOWM date and provide back. As an update, the Government was able to obtain the development of the ECP and [REDACTED] to support MOT&E as consideration from [REDACTED]. All MOT&E vehicles will have an installed [REDACTED] solution.
 - ii. Follow-up question from [REDACTED] on if [REDACTED] will be required to provide [REDACTED] for production vehicles. JPO JLTV Response: [REDACTED] is not contractually required to provide the [REDACTED] for production vehicles. The JPO will be funding the production of the final solution and ensuring the solution will be on all vehicles are equipped prior to fielding.
 - iii. September 26, 2017 follow-up email to the DODIG Audit team on the SOW-M. JPO JLTV Response: "Reference your call this morning on the [REDACTED] WD Start of Work Meeting noted below in response to question 3. Due to the Government obtaining execution of the WD as consideration from [REDACTED] it was slightly delayed from our projection back in August. The Start of Work was originally projected to be 25 September, but has been formally scheduled to occur this afternoon at 1500 EST."
- d. Reference JPO JLTV communication to stakeholders on this subject:
 1. September 6, 2017 Test Concept Brief to DOT&E – [REDACTED], MCOTEA, ATEC, TCM-Trans
 - i. JPO JLTV reinforced previous statements to the community that all MOT&E vehicles will be equipped with an [REDACTED]
 2. September 12, 2017 Contract Modification P00061 was awarded to [REDACTED] which included the execution of the [REDACTED] WD at no cost to the Government. The WD requires [REDACTED] to be shipped to Aberdeen Test Center for Product Qualification Testing and [REDACTED] to be installed at the MOT&E test site. PCO Letter released on September 12, 2017 authorized [REDACTED] to begin procuring all necessary material to support delivery of [REDACTED] for Developmental Testing and MOT&E and prior to the SOW-M.
3. Path Forward:
 - a. [REDACTED] will provide their production solution for all [REDACTED] Vehicles at MOT&E per contract modification P00061.
 - b. The Government will conduct an informed assessment of the ECP.

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1. Factors which will be reviewed include, but are not limited to; production cost, retrofit costs, weight of the solution, and test feedback.
2. Following the assessment, a decision will be made whether to accept the proposed solution as is, modify it, or seek an alternative solution which may be required due to other factors (e.g. cost too high). This decision is solution based. It is not an assessment of the requirement's validity.
3. JPO JLTV has, and remains, committed to a solution for MOT&E and all fielded vehicles. If the proposed solution is adjusted from the MOT&E solution, further qualification testing on the solution may be required and will be coordinated with the Test Community.
4. JPO JLTV is committed to ensure all vehicles will either have [REDACTED] prior to fielding.

4. DODIG recommended actions:

- a. Establish an [REDACTED] requirement for [REDACTED]
 1. Establish an [REDACTED] requirement for [REDACTED]
 - i. Requirement has existed and is the basis for the STS WD.
 2. Integrate the [REDACTED] solution to the vehicle prior to beginning multi-service operational test and evaluation
 - i. JPO JLTV has executed a contract to ensure all MOT&E vehicles will have an [REDACTED] solution prior to beginning MOT&E.
 3. Determine the impact of the solution on JLTV costs
 - i. Production cost estimates are a deliverable during the STS WD activities. The program incorporates approved Government ECP costs into the appropriate reporting and cost estimating requirements.
- b. JPO JLTV has continued to follow a deliberate acquisition strategy to balance requirements, capabilities and affordability to fill the critical Army and USMC capability gap for a protected, mobile, transportable and net ready light tactical vehicle. A [REDACTED] remains one of these many valid requirements.

RELEASED BY:

[REDACTED] [REDACTED]

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Appendix C

Management Comments



DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
COMBAT SUPPORT & COMBAT SERVICE SUPPORT
6501 EAST ELEVEN MILE ROAD
WARREN, MICHIGAN 48397-5000

SFAE-CSS

20 FEB 18

MEMORANDUM FOR HQDA ASA(ALT) (ATTN: [REDACTED], Director, Combat Sustainment Systems), 2530 Crystal Drive, Taylor Bldg, Arlington, VA 22202-3911

FOR DoD Office of Inspector General, (ATTN: [REDACTED], Program Director), 4800 Mark Center Drive, Alexandria, VA 22350-1500

SUBJECT: Draft Report on the Audit of Army and Marine Corp Joint Light Tactical Vehicle (Project No. D2017-D000AU-0150.000)

1. Reference Memorandum, DoD Office of Inspector General, 19 January 2018, subject: Army and Marine Corps Joint Light Tactical Vehicle (Project No. D2017-D000AU-0150.000).
2. The Program Executive Office, Combat Support & Combat Service Support (PEO CS&CSS) and Joint Program Office Joint Light Tactical Vehicle (JPO JLTV) reviewed the facts and recommendations 1a., 1b., and 1c. The PEO CS&CSS concurs with recommendations 1a and 1b, and concurs with comments to recommendation 1c. The planned actions to implement the recommendations are contained in the enclosure.
3. The PEO CS&CSS and JPO JLTV conducted a security review of the DoDIG draft report dated 19 Jan 18. The PEO and JPO JLTV appropriately portion marked the draft report with Unclassified//For Official Use Only (FOUO) and the related Freedom of Information Act (FOIA) exemptions. The draft report with FOIA comments and redactions were provided to the auditors under separate cover. If any changes are made prior to the report becoming final, the PEO CS&CSS would need to re-review both the FOUO version and the publicly releasable version to avoid a spillage of sensitive information.
4. The point of contact for this reply is [REDACTED].

Encl

ROSS. R. GUCKERT
Program Executive Officer (Acting),
Combat Support & Combat Service Support

Management Comments

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**Program Executive Office, Combat Support & Combat Service Support
Comments to the DoD Office of Inspector General (DODIG)
Draft Report titled:
Audit of Joint Light Tactical Vehicle
(Project No. D2017-D000AU-0150.000)**

DODIG OBJECTIVE: DODIG determined whether the Army and Marine Corps developed adequate test plans and demonstrated effective results to prepare the Joint Light Tactical Vehicle (JLTV) program for full rate production.

DODIG CONCLUSION: The Army and Marine Corps developed adequate test plans but have not demonstrated effective test results to prepare the JLTV program for full rate production. DODIG reviewed eight maintenance-related vehicle performance requirements for the JLTV; of these requirements, the JLTV exceeded [REDACTED] and met [REDACTED] but did not meet [REDACTED]. The requirements developer has acknowledged and accepted the JLTV test results; consequently, the [REDACTED] unmet maintenance related vehicle performance requirements will not be incorporated in the baseline vehicle to maintain program cost and schedule. Moreover, despite not meeting all maintenance-related performance requirements, the JPO estimates a reduction in O&S costs by \$8.3 billion. However, the JLTV requirements developer did not clearly define vehicle [REDACTED] requirements; because of this, the JLTV does [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ADDITIONAL FACTS: The DODIG report is a snap-shot in time; however, to update the report with the most current information (as of 13 Feb 18), see Attachment 1 with updated details, new dollar figures, and quantities. Also, see Attachment 2 which contains the current performance status per scoring conference seven of the Maintenance Requirements; and, the [REDACTED] implementation efforts performed to date to address the recommendations regarding an [REDACTED].

RECOMMENDATION:

For the Program Executive Office, Combat Support and Combat Service Support (PEO, CS&CSS)

Recommendation 1: DODIG recommends the Program Executive Office, Combat Support and Combat Service Support (PEO, CS&CSS) work with the Project Manager, Joint Program Office, Joint Light Tactical Vehicles (PM, JPO JLTV) to:

Recommendation 1 in the Draft Report and Final Report was directed to the Project Manager, Joint Program Office, JLTV.

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- a. Determine the additional costs required to integrate the selected [REDACTED] solution into the JLTV and determine whether those costs are affordable.

Concur. The PEO CS&CSS provides the information paper titled, 'JLTV Maintenance Requirements and [REDACTED]', dated 1 Feb 18 (see attachment 2) which captures the specific efforts performed to date by the PM and [REDACTED] to provide an [REDACTED]. In summary, JPO JLTV and [REDACTED] began efforts to identify potential solutions for an [REDACTED] through a Science and Technical Services (STS) work directive. Based on the efforts performed, and deliverables provided under the STS (reference 4.h of attachment 2), the program office estimates the [REDACTED] will drive a .2% APUC increase and will not cause a cost breach. Once the government approves the final Engineering Change Proposal (ECP) for the [REDACTED] the program will incorporate the cost into the appropriate reporting and cost estimating systems to determine and report affordability.

Implementation Date: 1 Feb 18

- b. Prior to fielding, equip all JLTVs with an [REDACTED] for use in any [REDACTED].

Concur. The PM, JPO JLTV remains committed to providing Soldiers and Marines with a [REDACTED]. The JLTV vehicles at Multi-service Operational Test and Evaluation (MOT&E) are equipped with an initial [REDACTED]. The JPO JLTV will ensure all vehicles will either have an [REDACTED] prior to fielding. The JPO JLTV plans to equip all JLTVs prior to the scheduled First Unit Equipped (FUE) expected by the end of 2QFY19.

Implementation Date: 31 Mar 19

- c. Clearly define and address program requirements in future contracts supporting systems acquisition.

Concur with Comments. The third recommendation ("Clearly define and address program requirements in future contracts supporting systems acquisition") is a general statement which does not reflect the approved acquisition strategy or consider the basis for accepted performance trades. The requirements are stated appropriately and we are committed

**This recommendation
was redirected
and renumbered
Recommendation 2.**

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Management Comments

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to executing continued excellence in acquisition. The JPO JLTV has continued to follow a deliberate acquisition strategy to balance requirements, capabilities, and affordability to fill the critical Army and USMC capability gap for a protected, mobile, transportable, and net ready light tactical vehicles. The JPO JLTV has reduced estimated Operations and Support cost by \$8.3B across the program's lifecycle primarily for the requirement trades. A [REDACTED] remains one of these many valid defined requirements and will be included in the follow-on contracts expected by the end of 1QFY21.

Implementation Date: 31 Dec 21

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Management Comments

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Management Comments

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Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	RAA
5- Main Body	Findings,	Substantive	Add clarification which explains, the [REDACTED] unmet requirements are child requirements to parent KPP and KSA requirements. And, although the child requirements are not met, the parent CPD requirements (KPPs & KSAs) from which these [REDACTED] unmet child requirements were derived were met by the JLTV. And, pursuing vehicle design changes to meet the tradable child requirements would increase base vehicle cost.	Without this information, the reader is misled or misinformed as the relevance of these [REDACTED] requirements and how design change would impact the program.		
		Critical	Reconsider the statement "[REDACTED] demonstrated effective results"	The program is achieving all threshold KPP requirements and a [REDACTED] design has been implemented on MOT&E vehicles through an STS work directive to address the [REDACTED] concerned. Furthermore, [REDACTED] of the 8 requirements reviewed in this report [REDACTED] the requirements which contribute to the \$8.3B savings and speaks to the demonstrated effectiveness.		
6-Mainbody	Adequate Test Plans, 1st para, last sentence	Substantive	Change "because the Army wanted to reduce the scope of testing" to "because the Army and Corp wanted to ensure the test plan would incorporate the extensive test results from the Independent Research & Development and Engineering and Manufacturing & Development phases which reduced test cost since the test results from these phases significantly reduced the data gap and test risk."	For greater accuracy. The current statement is rather too simplified and does explain the strategy employed.		

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Management Comments

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Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	RAA
6-Main Body	Adequate Test Plans, 2nd Paragraph, 1st sentence	Administrative	add "LRIP" between the words "the TEMP"	to improve accuracy		
7-Main Body	Last para, 5th sentence	Administrative	after the word "system", add "and is approved through the Joint Capabilities Integration, and Development System (JCIDS) process."	To improve accuracy		
7- Main Body	last para, 6th sentence	Administrative	at the end of sentenced add "to the contractor".	To clarify the difference in greater detail.		
8-Main Body	Table 1	Critical	Change legend where GREEN represents= meets or exceeds CPD and PD Requirement, YELLOW= meets or exceeds CPD requirement but does not meet PD requirement, RED does not meet CPD and PD requirement. Update colors as follows: [REDACTED] [REDACTED] [REDACTED]	The table legend does not match the findings. The findings are captured in terms of performance requirements, not performance goals. The report should use common terms which are presented consistently in the document, and based on the program requirements.		
8- Main Body	Table 1	Administrative	Change title to "Comparison of observed performance to program threshold and objective performance requirements"	To improve accuracy...as currently state		
9-Main Body	Table 1, last row,	Substantive	[REDACTED]	It is currently missing.		
9-Main Body	Table 1,	Critical	Add Scoring conference 7 results which are as [REDACTED] [REDACTED] [REDACTED]	To give the reader the most recent information.		
9-Main Body	Operation and Support Costs Estimates Reduced	Critical	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	To ensure data is most current available.		
10- Main Body	The JLTV Does [REDACTED] 1st para	Administrative	Change "The JLTV" to "Some JLTV Variants"	To improve accuracy		
10-Main Body	The JLTV Does [REDACTED] 1st para, third sentence	Administrative	Change "The contractor changed the [REDACTED] from..." to "After EMD, the contractor changed the [REDACTED] in their LRIP design from...."	This helps clarify when they changed.		

FOUO

Management Comments

~~FOUO~~

Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	RAA
10- Main Body	The JLTV Does [REDACTED] 2nd para, third sentence	Administrative	between "officials" and "developed" add "in coordination with JPO JLTV"	To improve accuracy and recognize JPO JLTV's involvement in these efforts.		
11- Main Body	Notice of Concern..., 2nd paragraph	Administrative	Add the following at the beginning of the paragraph, "As part of an ongoing effort, the...."	Helps clarify these efforts are continue to find the optimum solution.		
12- Main Body	Joint Program Manger, JLTV commetns	Critical	Retain last sentence, replace the beginning with "JPO JLTV is committed to providing Soldiers and Marines with a [REDACTED] as an additional means of [REDACTED]. In 4QFY17, JPO JLTV and [REDACTED] began efforts to identify potential solutions for an [REDACTED] specifically a [REDACTED] through an Science and Technical Services Work Directive. As a result of these efforts, Multi-service Operational Test and Evaluation vehicles are equipped with an initial version of the [REDACTED] solution. Upon completion of the STS efforts and successful testing, the final solution will be integrated into production vehicles through a formal engineering change proposal. The [REDACTED] solution is planned to be fully integrated onto vehicles prior to fielding. It should be noted a [REDACTED]	To ensure the reader is provide current information.		
12-Main Body	Our response	Substantive	Change statement to consider the fact the program will not start fielding until 2QFY19	As stated, it suggests the actions should already be complete rather than recognizing JPO JLTV's efforts to date the time remaining to incorporate the final [REDACTED]		
12-Main Body	Recommendation 1	Substantive	Consider re-wording the first two recommendations	The first two are a little conflicting. The seconds seems to suggest to equip the vehicle with an [REDACTED] regardless of cost. While the first, suggest the PM to implement if affordable.		

~~FOUO~~

Management Comments

UNCLASSIFIED//~~FOR OFFICIAL USE ONLY~~**Attachment 2:**

INFORMATION PAPER

SFAE-CSS-JL

1 Feb 2018

SUBJECT: Joint Light Tactical Vehicle (JLTV) Maintenance Requirements and [REDACTED]

1. (U) Purpose: To provide background information regarding the DoD Inspector General draft report – Army and Marine Corps Joint Light Tactical Vehicle (D2017AU-0150).

2. (U) JLTV Acquisition Strategy

a. (U//~~FOUO~~) JLTV CPD requirements were tiered to provide tradespace for competition in support of the approved Acquisition Strategy and source selection process. This allowed for select requirements (non- KPP/KSA and primary safety requirements) to be traded by offerors in order to achieve an optimal balance of overall performance against cost. Traded requirements were reviewed at the JLTV Configuration Steering Board (CSB) on 5 December 2016, and the USMC Combat Development and Integrations Command and Army Training and Doctrine Command formally acknowledged they would not be assessed as part of the based configuration. No KPPs/KSAs were traded during this process.

3. (U) Status of JLTV Maintenance Requirements

a. (U//~~FOUO~~) The DoDIG Draft report identifies eight maintenance-related requirements and asserts that [REDACTED] (note: assessments were provided based on scoring conference 5 data which was available during the investigation)

b. (U//~~FOUO~~) MR – Maintenance Ratio is defined as the field level maintenance ratio expressed as maintenance man-hours per operating mile.

i. The CPD threshold requirement is [REDACTED] man-hours per mile.

ii. JLTV demonstrated MR is currently [REDACTED] man-hours per mile for the vehicles equipped (as of Scoring Conference 7).

iii. This requirement was traded by [REDACTED]. However the [REDACTED] when utilized as part of the Operational Availability (KPP) calculation, shows the potential O&S [REDACTED] by the O&S cost decrease achieved by JLTV's [REDACTED].

c. (U//~~FOUO~~) MTTR – is defined as "hood up to hood down" repair time and includes isolation of failure, repair, or remove/replace, and verification of resolution of issue.

i. The CPD threshold requirement is [REDACTED] hours.

ii. JLTV demonstrated a MTTR of [REDACTED] hours (as of Scoring Conference 7), [REDACTED] the CPD requirement by approximately [REDACTED].

iii. This requirement was traded by [REDACTED] and the JPO is [REDACTED]

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Management Comments

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SFAE-CSS-JL

SUBJECT: Joint Light Tactical Vehicle (JLTV) Maintenance Requirements and [REDACTED]

[REDACTED] The [REDACTED] performance which [REDACTED] the CPD reliability (KSA) threshold requirement.

d. (U//~~FOUO~~) MMBEFF – is defined as the frequency that the JLTV would be unable to fully perform any essential function at or above requirements. EFF is any incident or malfunction of the vehicle that causes (or could have caused) the loss of one or more essential functions or degradation of an essential function below specified levels.

i. There is no CPD specific requirement for MMBEFF. A derived threshold requirement of [REDACTED] MMBEFF (objective of [REDACTED] MMBEFF) was incorporated into the JLTV purchase description.

ii. JPO JLTV [REDACTED] MMBEFF at [REDACTED] miles (as of Scoring Conference 7).

iii. The requirement to achieve [REDACTED] miles was traded by [REDACTED] and the JPO is currently [REDACTED]. The JPO will utilize the reliability data to potentially inform future designed if a component that [REDACTED] for a separate reason (e.g. multiple component source competition)

e. (U//~~FOUO~~) Operational Availability – is defined as is the degree to which one can expect a piece of equipment or weapon system to work properly when required.

i. The CPD threshold requirement is [REDACTED] and objective requirement is [REDACTED]

ii. JLTV has [REDACTED] operational availability of [REDACTED].

f. (U//~~FOUO~~) Mean Miles Between Operational Mission Failures (MMBOMF) is defined as the total operating miles divided by the total number of operational mission failures.

i. The CPD threshold requirement is [REDACTED] miles.

JLTV has [REDACTED] miles.

ii. This value [REDACTED] the CPD requirement of [REDACTED] miles and plays a [REDACTED] role in JLTV's estimated O&S lifecycle savings.

g. (U//~~FOUO~~) Mean Miles Between Hardware Mission Failures (MMBHMF) is a subset of MMBOMF that includes mission failures chargeable to contractor furnished equipment and contractor technical and operator manuals.

i. There is no specific CPD requirement for MMBHMF. An initial contract threshold requirement of [REDACTED] MMBHMF was derived from the CPD Sustainment KPP and Reliability Key System Attribute then used in the purchase description. [REDACTED], as part of their competitive proposal, was contractually required achieve a demonstrated performance of [REDACTED] MMBHMF.

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SUBJECT: Joint Light Tactical Vehicle (JLTV) Maintenance Requirements and [REDACTED]

ii. JLTV has [REDACTED] miles.

h. (~~U//FOUO~~) Fuel Efficiency while the vehicle is moving is defined and measured in ton miles per gallon and is equivalent to a ton of payload moved.

i. The CPD required is [REDACTED] ton-miles per gallon.

ii. The JLTV A0 vehicles [REDACTED] ton-miles per for fuel efficiency over the mission profile terrains.

iii. This value [REDACTED] CPD requirement of [REDACTED] ton-miles per gallon and play a [REDACTED] in JLTV's estimated O&S lifecycle savings.

i. (~~U//FOUO~~) Fuel Efficiency at Idle is defined as the amount of fuel the vehicle uses while idling and providing 10kW total of power to on-board systems.

i. The CPD required is [REDACTED] gallons per hour.

ii. The JLTV A0 vehicles have [REDACTED] gallons per hour for fuel efficiency at idle.

iii. This value [REDACTED] the CPD requirement of [REDACTED] gallons per hour and play a [REDACTED] in O&S cost savings.

j. (~~U//FOUO~~) The JLTV's achieved performance, as it relates to the eight maintenance requirements, is a key contributor to the \$8.3B lifecycle savings which is reported by DoDIG and concurred by JPO JLTV.

4. (U) Status of JLTV [REDACTED]

a. (U) JROC Validated CPD for [REDACTED] is a Tier 3 (Important) Attribute.

i. Tier 3 attributes are noted in Section 5.3 of the CPD as capabilities required to achieve the full military utility of the vehicle, but below the significance of Tiers 1 (Key Performance Parameters / Key System Attributes) and Tier 2 (Fundamental).

ii. Section 5.3.3.3 provides the CPD requirements for [REDACTED].

iii. Combat Developers acknowledged the JLTV CPD requirements were tiered to provide trade space for competition in support of the JLTV Acquisition Strategy and source selection process. Highest tier (Key Performance Parameter / Key System Attributes) requirements like mobility, transportability, payload, protection, and reliability are not tradable and will be verified as part of on-going Production and Deployment (PD) phase testing. Traded, lower tiered requirements would be assessed by US Army and USMC Combat Developer

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SUBJECT: Joint Light Tactical Vehicle (JLTV) Maintenance Requirements and [REDACTED]

representatives as part of standing JLTV Requirements Management and Analysis Process (RMAP).

b. (U) JPO JLTV, with coordination with the Combat Developers decomposed Section 5.3.3.3 of the CPD into 13 requirements captured in the JLTV Purchase Description Family of Vehicles (PDFOV) and released in the Low Rate Initial Production (LRIP) Request for Proposal (RFP).

i. [REDACTED] as part of their proposal solution, traded the PDFOV Tier 3 requirement [REDACTED]

c. (U) JPO JLTV Risk Assessment Board (RAB) initiated risk [REDACTED] on August 30, 2016. The subject risk was initially rated as Medium, with [REDACTED] under an STS Work Directive to lower the risk.

d. (U) An STS [REDACTED] Study, and ECP, Work Directive was approved for development by the Program Manager in February 2017.

e. (U) Pending ECP for [REDACTED] Army Test and Evaluation Command (ATEC) coordinated with JPO JLTV on Developmental Test hardware solutions to ensure test operators would have an [REDACTED] YTC solution was agreed on February 3, 2017 and ATC solution was agreed on March 8, 2017.

f. On September 12, 2018, a contract Modification was awarded to [REDACTED] which included the execution of the [REDACTED] WD at no cost to the Government. The WD requires [REDACTED] to be shipped to Aberdeen Test Center for Product Qualification Testing and [REDACTED] to be installed at the MOT&E test site. PCO Letter released on September 12, 2017 authorized [REDACTED] to begin procuring all necessary material to support delivery of the [REDACTED] for Developmental Testing and MOT&E and prior to the SOW-M.

g. (U) JPO JLTV remains committed to providing Soldiers and Marines with a [REDACTED] an [REDACTED]

h. (U//~~FOUO~~) In 4QFY17, JPO JLTV and [REDACTED] began efforts to identify potential solutions for an [REDACTED] through a Science and Technical Services (STS) Work Directive. Upon completion of this effort and successful testing, it will be integrated onto production vehicles through a formal engineering change proposal. The [REDACTED] is planned to be fully integrated onto vehicles prior to fielding.

i. (U//~~FOUO~~) JLTV vehicles at Multi-service Operational Test and Evaluation (MOT&E) are equipped with an initial [REDACTED]

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SFAE-CSS-JL

SUBJECT: Joint Light Tactical Vehicle (JLTV) Maintenance Requirements and [REDACTED]

- i. (U//FOUO) JPO JLTV is committed to ensure all vehicles will either have an [REDACTED] prior to fielding.

5. (U) JPO JLTV response to DODIG recommended actions

- a. DODIG recommendation: Determine the additional costs required to integrate the selected [REDACTED] in the JLTV and determine whether those costs are affordable.

- i. JPO JLTV response: Once the government approves the final ECP for the [REDACTED] the program will incorporate the cost into the appropriate reporting and cost estimating systems to determine and report affordable. As a result of the efforts performed under the STS (reference 4.h of this document), the program office estimates the [REDACTED] will drive a .2% APUC increase and will not cause a cost breach.

- b. Prior to fielding, equip all JLTVs with an [REDACTED].

- i. JPO JLTV response: Reference section 4.j of this document.

- c. Clearly define and address program requirements in future contracts supporting systems acquisitions.

- i. This recommendation is a general statement which does not reflect the approved acquisition strategy or consider the basis for accepted performance trades. The requirements were stated appropriately and we are committed to executing continued excellence in acquisition.

RELEASED BY:

[REDACTED]

[REDACTED]

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Appendix D

Our Response to Management Comments Attachment 1

(FOUO) Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
1- Main Body	Background, 2nd paragraph, 2nd sentence	Administrative	Add the word “tactical” between “light” and “utility”	To match Executive Summary and for accuracy		No change. The text is from the JLTV Capability Production Document.
1- Main Body	Background, 2nd para, 3rd sentence	Administrative	Remove the words [REDACTED]	The words [REDACTED]		Report updated to remove “[REDACTED].”
1- Main Body	Background, 2nd paragraph, 3rd sentence	Administrative	after the word [REDACTED], change the sentence to read [REDACTED]	To improve sentence accuracy.		Report updated to more accurately reflect vehicle performance impacts.
3- Main Body	Program Management section, second paragraph, second sentence	Administrative	replace “also called Milestone C” with “which begins after a successful Milestone C”.	To improve accuracy		No change. Text is derived from DODI 5000.02.
4- Main Body	Program Costs and Procurement Efforts	Critical	[REDACTED]	To ensure data is most current available.		Report updated to reflect data. The source for quantity and program cost is the JLTV Defense Acquisition Executive Summary report, dated December 25, 2017.
5- Main Body	Findings, 2nd sentence	Critical	Change [REDACTED] to [REDACTED]	JLTV [REDACTED] CPD requirements; and PD Requirement as of SC5 (“performance requirements”). In fact, as a result of Scoring Conference 7, JLTV [REDACTED]		Report updated to more accurately reflect performance against objective and threshold requirements. Footnote description added to define objective and threshold.

(FOUO)

Our Response to Management Comments Attachment 1

(FOUO) Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
5- Main Body	Findings,	Substantive	Add clarification which explains, the [REDACTED] unmet requirements are child requirements to parent KPP and KSA requirements. And, although the child requirements are not met, the parent CPD requirements (KPPs & KSAs) from which these [REDACTED] unmet child requirements were derived were met by the JLTV. And, pursuing vehicle design change to meet the tradable child requirements would increase base vehicle cost.	Without this information, the reader is mislead or misinformed as the relevance of these [REDACTED] requirements and how design change would impact the program.		No change. The text reads clear as written.
		Critical	Reconsider the statement "[REDACTED] demonstrated effective results"	The program is achieving all threshold KPP requirements and a [REDACTED] [REDACTED] design has been implemented on MOT&E vehicles though an STS work directive to address the [REDACTED] [REDACTED] concerned. Furthermore, [REDACTED] of the 8 requirements reviewed in this report [REDACTED] the requirements which contribute to the \$8.3B savings and speaks to the demonstrated effectiveness.		Finding title has been changed.
6- Main Body	Adequate Test Plans, 1st para, last sentence	Substantive	Change "because the Army wanted to reduce the scope of testing" to "because the Army and Corp wanted to ensure the test plan would incorporate the extensive test results from the Independent Research & Development and Engineering and Manfuturaing & Development phases which reduced test cost since the test results from these phases significantly reduced the data gap and test risk. "	For greater accuracy. The current statement is rather too simplified and does explain the strategy employed.		No change. The report reads clear as written. This information is discussed in the following paragraph.

(FOUO)

Our Response to Management Comments Attachment 1

(FOUO)	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
Page						
6- Main Body	Adequate Test Plans, 2nd Parapgraph, 1st sentence	Administrative	add "LRIP" between the words "the TEMP"	to improve accuracy		No change. There is no justification for changing the title to LRIP TEMP.
7- Main Body	Last para, 5th sentence	Administrative	after the word "system", add "and is approved through the Joint Capabilities Integration, and Development System (JCIDS) process."	To improve accuracy		No change. The text is clear as written.
7- Main Body	last para, 6th sentence	Administrative	at the end of sentenced add "to the contractor".	To clarify the difference in greater detail.		"To the contractor" added.
8- Main Body	Table 1	Critical	Change legend where GREEN represents= meets or exceeds CPD and PD objective, YELLOW= meets or exceeds CPD requirement but does not meet PD requirement, RED does not meet CPD and PD requirement. ;Update colors as follows: [REDACTED]	The table legend does not match the findings. The findings are captured in terms of performance requirements, not performance goals. The report should use common terms which are presented consistently in the document, and based on the program requirements.		Legend has been updated to state: GREEN: Exceeded the performance objective and threshold; YELLOW: Met or exceeded the performance threshold but did not meet the performance objective; RED: Did not meet the performance threshold; Grey: There was no requirement identified in the document.
8- Main Body	Table 1	Administrative	Change title to "Comparison of observed performance to program threshold and objective performance requirements"	To improve accuracy...as currently state		No change. Table 1 is accurate as written. (FOUO)

Our Response to Management Comments Attachment 1

(FOUO) Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
9- Main Body	Table 1, last row,	Substantive	[REDACTED].	It is currently missing.		No change. The May 2016 purchase description does not reference this requirement or address that the contractor traded the requirement. The May 2016 purchase description provided the objective value of [REDACTED], but does not provide a threshold value for [REDACTED], and there is no other indication within the purchase description as to why the threshold was not included or why the [REDACTED].
9- Main Body	Table 1,	Critical	Add Scoring conference 7 results which are as [REDACTED]	To give the reader the most recent information.		No change to report body. Scoring conference 7 information is summarized in management responses to the report. (FOUO)

Our Response to Management Comments Attachment 1

(FOUO) Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
9- Main Body	Operation and Support Costs Estimates Reduced	Critical	[REDACTED]	To ensure data is most current available.		No change made to costs, however, the report was updated to reflect data source is the JLTV DAES report, dated December 25, 2017. See comment 4-Main Body.
10- Main Body	The JLTV Does [REDACTED], 1st para	Administrative	Change "The JLTV" to "Some JLTV Variants"	To improve accuracy		Made changes to specify the [REDACTED] of the JLTV.
10- Main Body	The JLTV Does [REDACTED], 1st para, third sentence	Administrative	Change "The contractor changed the [REDACTED] from..." to "After EMD, the contractor changed the [REDACTED] in their LRIP design from...."	This helps clarify when they changed.		No change. The text is clear as written.
10- Main Body	The JLTV Does [REDACTED], 2nd para, third sentence	Administrative	Between "officials" and "developed" add "in coordination with JPO JLTV"	To improve accuracy and recognize JPO JLTV's involvement in these efforts.		No change. This statement was attributed to ATEC officials, who stated that they developed the temporary solution.
11- Main Body	Notice of Concern..., 2nd paragraph	Administrative	Add the following at the beginning of the paragraph, "As part of an ongoing effort, the...."	Helps clarify these efforts are continue to find the optimum solution.		No change. The text is clear as written. (FOUO)

Our Response to Management Comments Attachment 1

(FOUO)						
Page	Paragraph	Comment Code	Recommendation	Rationale	Adj Code	DoD OIG Response
12- Main Body	Joint Program Manger, JLTV comments	Critical	Retain last sentence, replace the beginning with “JPO JLTV is committed to providing Soldiers and Marines with a [REDACTED] as an additional means of [REDACTED]. In 4QFY17, JPO JLTV and [REDACTED] began efforts to identify potential solutions for an [REDACTED], specifically a [REDACTED] through an Science and Technical Services Work Directive. As a result of these efforts, Multi-service Operational Test and Evaluation vehicles are equipped with an initial version of the [REDACTED] solution. Upon completion of the STS efforts and successful testing, the final solution will be integrated into production vehicles through a formal engineering change proposal. The [REDACTED] [REDACTED] is planned to be fully integrated onto vehicles prior to fielding. It should be noted a [REDACTED] [REDACTED] [REDACTED]	To ensure the reader is provide current information.		No change. The text is clear as written. The report adequately summarizes comments to the NOC.
12- Main Body	Our response	Substantive	Change statement to consider the fact the program will not start fielding until 2QFY19	As stated, it suggests the actions should already be complete rather than recognizing JPO JLTV’s efforts to date the time remaining to incorporate the final [REDACTED].		No change. The report describes the current situation. Moreover, the report states “prior to fielding,” which does not suggest that the actions should already be complete. (FOUO)

~~(FOUO)~~

Acronyms and Abbreviations

ATEC	Army Test and Evaluation Command
CPD	Capability Production Document
HMMWV	High Mobility Multi-purpose Wheeled Vehicle
JLTV	Joint Light Tactical Vehicle
JPO	Joint Program Office
MMBEFF	Mean Miles Between Essential Function Failure
MMBHMF	Mean Miles Between Hardware Mission Failure
MMBOMF	Mean Miles Between Operational Mission Failure
MR	Maintenance Ratio
MTTR	Mean Time to Repair
OT&E	Operational Test and Evaluation
O&S	Operations and Support
PEO CS&CSS	Program Executive Office Combat Support and Combat Service Support
PD	Purchase Description
SC	Scoring Conference
TEMP	Test and Evaluation Master Plan

Glossary

Operational Availability. The degree (expressed as a decimal between 0 and 1, or the percentage equivalent) to which one can expect a piece of equipment or weapon system to work properly when it is required. Operational availability is calculated by the number of times the system was available, divided by the number of times the system was required. It is the quantitative link between readiness objectives and supportability. Operational availability is part of the JLTV primary requirement for sustainment.

Essential Function Failure (EFF). A failure that prevents a system from being fully mission capable under wartime definitions. EFF is any incident or malfunction of the vehicle that causes (or could have caused) the loss of one or more essential functions or degradations of an essential function below specified levels.

Mean Miles Between Essential Function Failure (MMBEFF). The measure of operational effectiveness that represents the frequency the JLTV would be unable to fully perform any essential functions at or above specified levels.

Mean Miles Between Hardware Mission Failure (MMBHMF). A subset of MMBOMF and only includes mission failures chargeable to contractor furnished equipment and contractor technical / operator manuals.

Mean Miles Between Operational Mission Failure (MMBOMF). Total operating miles divided by the total number of operational mission failures. An operational mission failure is any incident of JLTV malfunction that could cause the inability to perform one or more designated mission-essential functions as described in the CPD.

Maintenance Ratios (MR). Measure of the maintenance manpower required to maintain the JLTV in an operational environment. It is expressed as the cumulative number of direct maintenance man-hours during a given period, divided by the cumulative number of system life units during that same time period. All maintenance actions are considered (that were scheduled as well as corrective, and without regard to their effect on mission or availability of the system). Man-hours for off-system repair of replaced components are included in the MR for the respective level.

Mean Time to Repair (MTTR). Sum of time to perform corrective maintenance divided by the total number of corrective maintenance actions during a given period. MTTR may be used to quantify the JLTV's maintainability characteristics. MTTR applies to the system-level configuration. MTTRs will be stated for the unit and the intermediate direct support levels of maintenance along with the percentage of all actions performed at each level.

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Congressional Liaison

703.604.8324

Media Contact

public.affairs@dodig.mil; 703.604.8324

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