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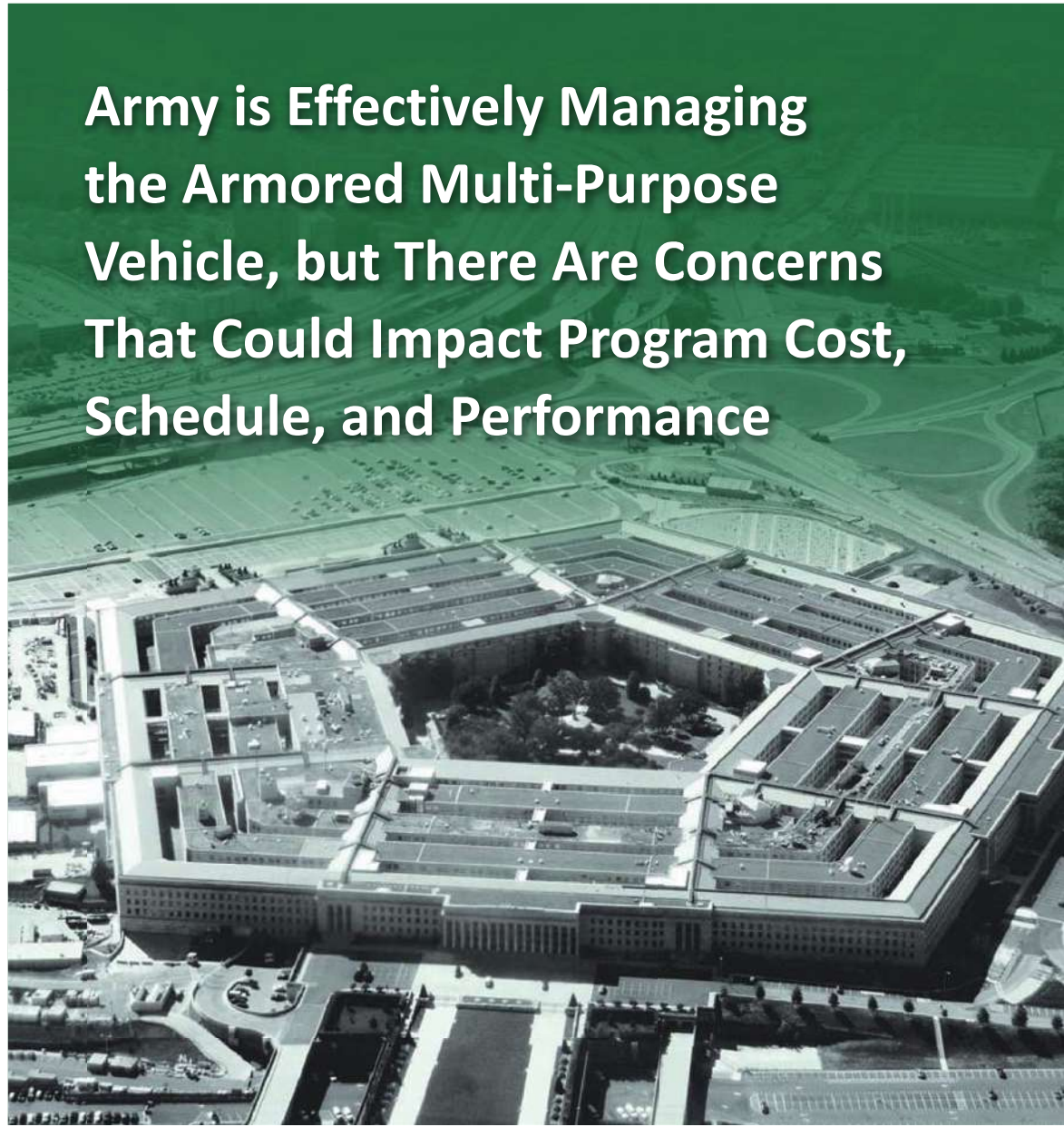
INSPECTOR GENERAL

U.S. Department of Defense

APRIL 28, 2017



Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There Are Concerns That Could Impact Program Cost, Schedule, and Performance



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Results in Brief

Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There Are Concerns That Could Impact Program Cost, Schedule, and Performance

April 28, 2017

Objective

We determined whether the Army effectively managed the Armored Multi-Purpose Vehicle acquisition program.

The Armored Multi-Purpose Vehicle is replacing the Armored Personnel Carrier (M113) that entered service in 1960. According to the Army, the Armored Multi-Purpose Vehicle will provide sufficient protection, mobility, and network-enabled functions to maneuver with and support combat vehicles throughout a range of military operations.

Findings

The project management office has effectively managed the Armored Multi-Purpose Vehicle acquisition program through the critical design review. Specifically, the project management office has kept the Armored Multi-Purpose Vehicle within cost requirements and met scheduled timeframes. Additionally, the project management office worked with U.S. Army Training and Doctrine Command officials to develop achievable performance requirements.

(FOUO) However, project management office officials may not meet entry requirements for initial production and testing (Milestone C) because they have not fully resolved vehicle performance and design demonstration concerns. For example, there are

(b)(3) on the Armored Multi-Purpose Vehicle mission command model which could cause (b)(3) between vehicle systems and (b)(3)

Findings (cont'd)

As a result, the Armored Multi-Purpose Vehicle Project Management Office could experience increased costs and schedule delays while addressing concerns with vehicle performance and design demonstration. Project management office officials expect the Armored Multi-Purpose Vehicle program to start developmental testing in June 2017. However, officials stated that the initial test schedule for the program was highly dependent on a very aggressive production and delivery schedule that did not allow much time to address program delays and design changes that could increase program costs.

In addition, the project management office may not procure the correct quantity of Armored Multi-Purpose Vehicles if the Army Acquisition Objective is not updated at Milestone C because the U.S. Army Deputy Chief of Staff, Programming (G-8), officials have not revised the procurement quantities to reflect the changes to the Army's equipment and force structure requirements. As a result, the Armored Multi-Purpose Vehicle acquisition program's estimated total cost and Average Procurement Unit Cost is not accurate.

Recommendations

We recommend that the Project Manager, Armored Multi-Purpose Vehicle Project Management Office, monitor and adequately address concerns with performance requirements, vehicle design stability, and issues identified during all future testing events prohibiting successful completion of entrance criteria before entering Milestone C planned for 2019. In addition, we recommend that the Deputy Chief of Staff, G-8, update the procurement quantity for inclusion in the capabilities production document using the current Army Modified Table of Organization and Equipment and force structure at Milestone C.



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Results in Brief

Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There Are Concerns That Could Impact Program Cost, Schedule, and Performance

Management Comments and Our Response

The Project Manager, Armored Multi-Purpose Vehicle Project Management Office agreed with and addressed all the specifics of the recommendation. The project management office will monitor and address concerns with performance requirements, vehicle design stability and issues identified in the testing phase. Therefore, the recommendation is resolved but will remain open. We will close this recommendation after we verify that the Project Manager addressed the performance requirements and vehicle design stability concerns prior to Milestone C.

The Chief of Soldier and Maneuver Division, responding for Deputy Chief of Staff, G-8, agreed with our finding and recommendation. The Deputy Chief of Staff, G-8, will update the Armored Multi-Purpose Vehicle procurement quantity for inclusion in the capabilities production document at Milestone C. Therefore, the recommendation is resolved but will remain open. We will close this recommendation after we verify that the Armored Multi-Purpose Vehicle procurement quantity in the capabilities production document is based on the Army's Modified Table of Organization and Equipment and force structure that are in effect at Milestone C.

Please see the Recommendations Table on the following page.

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Recommendations Table

| Management | Recommendations Unresolved | Recommendations Resolved | Recommendations Closed |
|--|-------------------------------|-----------------------------|---------------------------|
| Project Manager, Armored Multi-Purpose Vehicle Project Management Office | None | A | None |
| Deputy Chief of Staff, G-8 | None | B | None |

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**

April 28, 2017

**MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,
TECHNOLOGY, AND LOGISTICS
AUDITOR GENERAL, DEPARTMENT OF THE ARMY**

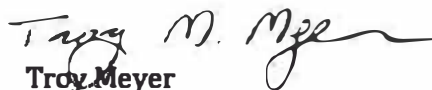
**SUBJECT: Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There
Are Concerns That Could Impact Program Cost, Schedule, and Performance
(Report No. DODIG-2017-077)**

We are providing this report for your information and use. The Army has effectively managed the Armored Multi-Purpose Vehicle acquisition program through critical design review; however, the project management office may not meet Milestone C entry requirements by February 2019. In addition, the project management office may not procure the correct quantities of Armored Multi-Purpose Vehicles if the Army Acquisition Objective is not updated at Milestone C. We conducted this audit in accordance with generally accepted government auditing standards.

We considered management comments on the draft of this report when preparing the final report. Comments from the Project Manager, Armored Multi-Purpose Vehicle Project Management Office and the Deputy Chief of Staff, G-8, addressed all specifics of the recommendations and conformed to the requirements of DoD Instruction 7650.03; therefore, we do not require additional comments.

Program Executive Office, Ground Combat Systems conducted numerous security reviews of the draft report and marked significant portions as "For Official Use Only" or "(U//FOUO)," but without fully justifying the markings. We have requested justifications but have not received adequate responses. To avoid further delay, we are issuing this report with the markings requested by the Program Executive Office, except we did not incorporate requested markings for information we found available on DoD public websites. Additionally, we will continue to request Program Executive Office provide adequate justifications for the For Official Use Only markings as part of our review of the report for posting to the DoD OIG public website pursuant to our proactive release policy.

We appreciate the courtesies extended to the staff. Please direct questions to Mr. Kenneth B. VanHove at (216) 535-3777, (DSN 499-9946)/Kenneth.VanHove@dodig.mil, or Mr. Joseph M. Kaseler at (216) 535-3757, (DSN 499-9948)/Joseph.Kaseler@dodig.mil.


Troy Meyer

Principal Assistant Inspector General
for Audit

Contents

Introduction

| | |
|-----------------------------------|---|
| Objective | 1 |
| Background | 1 |
| Review of Internal Controls | 5 |

Finding A. Project Management Office Officials Should Continue Resolving Concerns With Performance and Design Demonstration Before Entering Milestone C

6

| | |
|--|----|
| Program Was Managed Effectively Through Critical Design Review | 6 |
| Vehicle May Not Meet Milestone C Entry Requirements | 8 |
| Program Could Experience Increased Cost and Schedule Delays | 10 |
| Management Comments on the Finding and Our Response | 11 |
| Recommendations, Management Comments, and Our Response | 12 |

Finding B. Deputy Chief of Staff, G-8, Needs to Revise Procurement Quantities of the Armored Multi-Purpose Vehicle

14

| | |
|--|----|
| Project Management Office Risks Procuring Incorrect Quantity of Vehicles | 14 |
| Vehicle Procurement Quantities Have Not Been Updated | 15 |
| Procurement Quantities Could Affect Vehicle Affordability | 17 |
| Management Comments on the Finding and Our Response | 18 |
| Recommendations, Management Comments, and Our Response | 19 |

Appendix

20

| | |
|--------------------------------------|----|
| Scope and Methodology | 20 |
| Use of Computer-Processed Data | 21 |
| Prior Coverage | 21 |

Management Comments

| | |
|---|----|
| Program Executive Office, Ground Combat Systems | 22 |
| Armored Multi-Purpose Vehicle Project Management Office | 23 |
| Deputy Chief of Staff, G-8 | 28 |

Acronyms and Abbreviations

29

Introduction

Objective

We determined whether the Army effectively managed the Armored Multi-Purpose Vehicle (AMPV) acquisition program. See Appendix for a discussion of the scope and methodology and prior audit coverage related to the audit objective.

Background

(FOUO) The U.S. Army's Armored Personnel Carrier (M113) entered service in 1960. The M113 was used extensively during the Vietnam War and was considered a reliable, versatile vehicle. However, the Army discontinued production of the M113 in 2007 because the vehicle (b)(3) (b)(3) or (b)(3) against modern (b)(7)(E), (b)(7)(F), such as (b)(7)(E), (b)(7)(F) and (b)(7)(E), (b)(7)(F). Additionally, the M113 lacked the size and power to incorporate the Army's network systems and other technologies.

The AMPV will replace the M113 in the Armored Brigade Combat Team (ABCT). According to the Army, it will provide the protection, mobility, and network-enabled functions to maneuver with and support combat vehicles throughout a range of military operations. The AMPV acquisition strategy was to modify an existing and operationally proven military vehicle. The AMPV design selected is largely based on the Bradley Fighting Vehicle platform.

The Army plans to purchase 2,897 AMPVs that consist of five different variants.

1. General Purpose—provides protected transport for soldiers and direct-fire support during tactical operations.
2. Mortar Carrier—provides mortar fire support during fast-pace offensive operations.
3. Mission Command—provides voice and data communication capabilities.
4. Medical Evacuation—provides medical support and mobile emergency care.
5. Medical Treatment—provides immediate medical care and life stabilization for casualties before their evacuation to a medical treatment facility.



Figure 1. Armored Multi-Purpose Vehicle
Source: Army.

Management of the Armored Multi-Purpose Vehicle Program

The Deputy Chief of Staff, Programming (G-8), is the principal military advisor to the Assistant Secretary of the Army for Financial Management and Comptroller and proposes recommendations to meet future requirements for acquisition programs, including the AMPV. The AMPV Project Management Office, within the Program Executive Office, Ground Combat Systems, leads the design and development of the AMPV, and manages the cost, schedule, performance, and risks associated with the program.

On December 23, 2014, the Army awarded BAE Systems Land & Armaments, L.P., a contract valued at \$382 million to perform engineering and manufacturing development services. The contract included additional low-rate initial production options that could increase the value to \$1.2 billion. According to the December 2015 Selected Acquisition Report, the AMPV total program costs that included development, procurement, and support were estimated to be \$10.7 billion.¹

¹ The Selected Acquisition Report is a periodic submission to Congress that includes a program's cost, schedule, and technical information. December 2015 is the latest Selected Acquisition Report issued for the AMPV.

Acquisition Oversight of the Armored Multi-Purpose Vehicle Program

The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics is the principal advisor to the Secretary of Defense for all matters concerning acquisition, technology, and logistics and provides oversight for major weapons systems including the AMPV. The following organizations under the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics provide oversight for the AMPV program.

- Assistant Secretary of Defense for Logistics and Materiel Readiness
 - monitors and reviews logistics, maintenance, materiel readiness, and sustainment.
- Deputy Assistant Secretary of Defense for Systems Engineering (DASD[SE])
 - provides systems engineering support, guidance, and oversight.
- Deputy Assistant Secretary of Defense for Developmental Test and Evaluation
 - ensures test planning and resourcing are adequate to discover system deficiencies, supports system development, and evaluates system performance.

DoD Acquisition Milestones

The defense acquisition system uses three milestones to oversee and manage major defense acquisition programs:

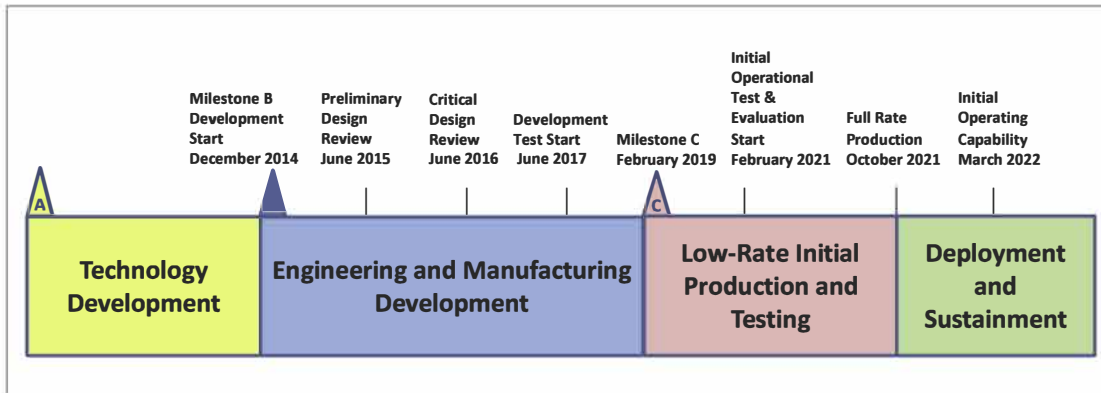
- Milestone A initiates technology development and risk reduction;
- Milestone B initiates engineering and manufacturing development; and
- Milestone C initiates low-rate initial production, testing, and deployment.

The AMPV program skipped Milestone A because it was based on mature technology and used readily available components and existing technologies. According to the Government Accountability Office, the Army made a reasonable decision not to pursue an AMPV prototype before it entered Milestone B based on the Army's cost benefit analysis.² The AMPV program began the engineering and manufacturing development phase in December 2014. During engineering and manufacturing development, the project management office conducted the preliminary design review in June 2015 to assess the system's capability of meeting the performance requirements.

² Government Accountability Office Report GAO-14-521R, "Department of Defense's Waiver of Competitive Prototyping Requirement for the Army's AMPV Program," April 25, 2014.

In June 2016, the project management office conducted the critical design review, which was a decision point during the engineering and manufacturing development phase to assess whether the AMPV was ready to begin developmental prototype production. A successful critical design review provides evidence that the system has a reasonable expectation of satisfying the performance requirements. The AMPV program is scheduled to begin low-rate initial production and testing in February 2019. Figure 2 illustrates the major AMPV program milestones.

Figure 2. Acquisition Milestones for the Armored Multi-Purpose Vehicle



Source: DoD OIG.

Performance Requirements for the Armored Multi-Purpose Vehicle

The AMPV is required to support military operations conducted in various terrains and environments. The Joint Requirements Oversight Council validates the capability needs and reviews and approves the primary performance requirements identified in the capabilities documents. Primary performance requirements are critical to developing an effective military capability. The Army Requirements Oversight Council validates all performance requirements, to include primary-, secondary- and third-level requirements. Secondary performance requirements are necessary to achieve a balanced system solution, but not critical enough to be primary requirements. Third-level requirements are not as critical as a primary or secondary requirement, but are still appropriate to include in the capabilities documents. The AMPV must meet the following primary performance requirements.

1. Net-Ready—supports network, communication, and interoperability capabilities.
2. Survivability—maintains critical capabilities under specific threats.
3. Force Protection—protects occupants against specific threats.
4. Sustainment—provides reliability and availability to support operations.

5. Energy—performs for extended periods of time in combat scenarios without refueling.
6. Mobility—provides the ability to maneuver in both urban and rural areas.
7. System Training—provides training for soldiers and support personnel.
8. Lethality—provides indirect fire support and applies only to the mortar carrier variant.

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.³

The Army's AMPV Project Management Office internal controls over the AMPV acquisition program were effective as they applied to the audit objective. However, project management office officials could experience increased costs and schedule delays resulting from unresolved vehicle performance and design demonstration concerns and problems identified during all future testing events.

³ DoD Instruction 5010.40, "Managers' Internal Control Program Procedures," May 30, 2013.

Finding A

Project Management Office Officials Should Continue Resolving Concerns With Performance and Design Demonstration Before Entering Milestone C

The AMPV Project Management Office has effectively managed the AMPV acquisition program through critical design review. Specifically, the project management office has kept the AMPV within cost requirements, met scheduled timeframes, and worked with U.S. Army Training and Doctrine Command (TRADOC) officials to develop achievable performance requirements. However, project management office officials may not meet Milestone C entry requirements because they have not fully resolved vehicle performance and design demonstration concerns. As a result, the AMPV Project Management Office could experience increased costs and schedule delays.

Program Was Managed Effectively Through Critical Design Review

The AMPV Project Management Office has effectively managed the AMPV acquisition program through the completion of the critical design review in June 2016. Specifically, the project management office has kept the AMPV within cost requirements, met scheduled timeframes, and worked with TRADOC officials to develop achievable performance requirements.

The AMPV Project Management Office has effectively managed the AMPV acquisition program through the completion of the critical design review.

(FOUO) The project management office has met the AMPV cost requirements through the critical design review. DoD Instruction 5000.02⁴ states that the Defense Acquisition Executive⁵ is responsible for enforcing affordability caps, which are established at Milestone B. The AMPV program affordability cap is an Average Procurement Unit Cost (APUC) that cannot exceed \$3.62 million at a production rate of at least (b)(3) vehicles per year.⁶ As of the December 2015 Selected Acquisition Report, the APUC was \$3.36 million, or \$260,000 below the Milestone C requirement.

⁴ DoD Instruction 5000.02, "Operation of the Defense Acquisition System," January 7, 2015.

⁵ The Defense Acquisition Executive acts as the milestone decision authority for Major Defense Acquisition Programs. The Office of the Secretary of Defense appointed the Army as the AMPV Service Acquisition Executive.

⁶ The APUC is calculated by dividing total procurement cost by the number of vehicles to be procured. Total procurement cost includes recurring and nonrecurring costs associated with production of the vehicle such as hardware or software, engineering, technical data, training, support equipment, and initial spares.

The AMPV Project Management Office has also met the scheduled timeframes that were established at Milestone B and is scheduled to enter Milestone C in February 2019 to initiate low-rate initial production, testing, and deployment. DoD Instruction 5000.02 requires program managers to conduct design reviews, which are used as decision points to proceed into the next program phase, and to manage program planning and execution. The project management office conducted a preliminary design review in June 2015 to assess the system's capability of meeting the performance requirements and proceed to detailed design. In addition, the project management office conducted the critical design review in June 2016 to assess whether the AMPV was ready to begin developmental prototype production. DASD(SE) officials stated that after completion of critical design activities, they had not identified any concerns that would prohibit the program from proceeding through the acquisition process.

Finally, the project management office worked with TRADOC officials to develop performance requirements that could be achieved within the Bradley Fighting Vehicle's design and capabilities. The AMPV capabilities development document identified 8 primary requirements, 23 secondary requirements, and 91 third-level requirements that address capability gaps for combat vehicles. Project management office and DASD(SE) officials determined that the AMPV may not meet some of the performance requirements outlined in the capabilities development document. As a result, TRADOC officials revised 1 primary-, 8 secondary-, and 17 third-level performance requirements.

(FOUO) DASD(SE) officials acknowledged that the revised AMPV requirements would still address the M113's capability gaps. For example, DASD(SE) officials did not expect the AMPV to meet the primary performance requirement for (b)(3) which required the AMPV, (b)(3) (b)(3) To address the (b)(3) performance concerns, DASD(SE) officials recommended that the requirements outlined in the capabilities development document be revised or change the AMPV design. As a result, the AMPV Project Management Office (b)(3) and TRADOC officials changed the performance requirement to include (b)(7)(E), (b)(7)(F) (b)(7)(E), (b)(7)(F) because of the unknown impact these (b)(7)(E), (b)(7)(F) would have on the vehicle's (b)(7)(E), (b)(7)(F) and (b)(7)(E), (b)(7)(F) capabilities. Subsequently, the Joint Requirements Oversight Council approved the revised (b)(3) requirement, which provided (b)(7)(E), (b)(7)(F)

Vehicle May Not Meet Milestone C Entry Requirements

Although the AMPV Project Management Office effectively managed the AMPV program through the critical design review, the program may not meet Milestone C entry requirements by February 2019. To successfully meet Milestone C entrance criteria, the program must:

- achieve performance requirements demonstrated through testing,
- demonstrate that the production vehicle design is stable⁷ and will meet requirements based on acceptable performance in developmental tests required by defense acquisition regulations, and
- (FOUO) maintain an APUC less than or equal to \$3.62 million based on a production rate of at least (b)(3) vehicles per year.

However, the project management office has not fully resolved performance and vehicle design demonstration concerns that could delay the program's ability to achieve performance requirements and demonstrate a stable vehicle design for entry into Milestone C.

Vehicle Performance Requirements Concerns Not Fully Resolved

(FOUO) Project management office officials have not fully resolved performance concerns associated with AMPV (b)(7)(E), (b)(7)(F) and (b)(7)(E), (b)(7)(F) that could prevent the vehicle from meeting performance requirements during developmental testing. For example, there are (b)(3) on the AMPV mission command model which could cause (b)(3) between vehicle systems and (b)(3). DASD(SE) officials identified this as a (b)(7)(E), (b)(7)(F) concern and stated that the initial requirement for no (b)(3) due to (b)(3) was not achievable because some (b)(3) is typical. (b)(3) occurs when (b)(3) are operated (b)(3) resulting in (b)(3) or (b)(3) with (b)(3). Therefore, TRADOC officials changed the secondary-level performance requirement to allow some (b)(3) when operating (b)(3). Subsequently, the Army Requirements Oversight Council approved the revised requirement.

Project management office officials have not fully resolved performance concerns associated with AMPV (b)(7)(E), (b)(7)(F) and (b)(7)(E), (b)(7)(F)

⁷ According to a GAO Report referenced in the "Defense Acquisition Guidebook," September 16, 2013, a stable product design is when 75 to 90 percent of the product drawings specifications and instructions are complete and demonstrations can show that the system design is capable of meeting the performance requirements.

(FOUO) During the critical design review, DASD(SE) and contractor officials suggested that (b)(3) could be reduced by using (b)(3) (b)(3) on the (b)(7)(E), (b)(7)(F) equipment. (b)(3) are used to maximize the effectiveness of (b)(3) that are close to each other. According to project management office officials, (b)(3) could cost \$5,000 to \$20,000 each. However, the project management office cannot determine how many (b)(3) would be needed to reduce (b)(3) until developmental testing, which is scheduled to begin in June 2017.

Furthermore, AMPV program cost could substantially increase if additional problems with the other performance requirements are identified during developmental testing. For example, as of July 2016, the contractor exceeded the allocated cost (cost overrun) by \$6.6 million because of additional work associated with performance requirements analysis and design changes. Project management office officials stated that although costs remain below the estimated funding levels for the program, they did not expect cost performance to improve over the remainder of the engineering and manufacturing development contract. The project management office should monitor and adequately address concerns with performance requirements and issues identified during all future testing events before entering Milestone C in 2019.

Concerns With Vehicle Design Demonstration Not Fully Resolved

Project management office officials did not fully resolve vehicle design demonstration concerns that could delay entry to Milestone C. A program logistics demonstration is required during developmental testing to ensure that the vehicle's design can achieve maintenance and sustainment requirements. The program logistics demonstration is one of the tests used to ensure that the AMPV vehicle design is stable before entering Milestone C. However, the project management office did not resolve the quality, cost, and timeliness problems with the contractor's logistics products, such as the technical and training manuals, used to support a program logistics demonstration.

(FOUO) According to officials with the Assistant Secretary of Defense for Logistics and Materiel Readiness, the contractor was late on multiple scheduled deliveries and provided low-quality logistics products that were needed to perform a logistics demonstration. Specifically, the contractor provided the technical data package 10 months behind schedule, resulting in delays to maintenance and repair analyses.⁸ The contractor's maintenance and repair analyses were also

⁸ (FOUO) Maintenance analysis is the identification of the steps and materials needed for maintenance tasks. Repair analysis determines the most efficient maintenance location for an item to be replaced or repaired.

(~~FOUO~~) rejected and the number of new Line Replaceable Units⁹ (replaceable parts) required for the AMPV were substantially miscalculated. The contractor originally planned to develop 6 new replaceable parts; however, the estimate is now over 40. The increase of replaceable parts will require the contractor to use additional staff and management reserve funds to develop logistics products for each new unit.¹⁰

(~~FOUO~~) To address these logistics product deficiencies, the contractor will use \$7 million in management reserve funds from the contract to increase staffing levels. The project management office officials stated that they are working with the contractor to resolve logistics problems; however, they have not fully resolved the quality and the timeliness issues of the logistics products. The officials with the Assistant Secretary of Defense for Logistics and Materiel Readiness still consider the logistics product development as high risk because the contractor may require assistance from the AMPV Project Management Office to develop the logistics products. In addition, project management office officials stated that if the logistics product deficiencies are not resolved by June 2018, then the logistics demonstration during developmental testing and Milestone C timeframes will not be met. The project management office should monitor and adequately address the concerns with vehicle design stability and issues identified during all future testing events before entering Milestone C in 2019.

Program Could Experience Increased Cost and Schedule Delays

(~~FOUO~~) The project management office could experience increased costs and schedule delays on the AMPV program. Project management office officials expect the AMPV program to start developmental testing in June 2017. However, officials with the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation stated that the initial AMPV test schedule was highly dependent on a very aggressive production and delivery schedule that did not allow much time to address common program delays and problems. Project management officials planned corrective action periods in December 2017 and November 2018 to resolve performance concerns prior to Milestone C in February 2019. However, the project management officials could identify additional problems during developmental testing that increase program costs and delay entry to Milestone C. Design changes or additional concerns identified during future testing events could increase costs and impact the programs ability to maintain an APUC within the acquisition program baseline.

⁹ (~~FOUO~~) A Line Replaceable Unit is an essential part that can be removed and replaced at the field level.

¹⁰ Management reserve funds are held to reduce or minimize unanticipated growth in the scope of work.

Management Comments on the Finding and Our Response

Project Management Office Comments on Program Management

The Project Manager stated that the AMPV Project Management Office is responsible for managing the program's cost, schedule, and performance risks and is already performing the actions identified in the recommendations. The Project Manager also stated that every program experiences risks and the project management office has taken action to mitigate the inherent risks. Specifically, the program schedule is baselined and includes Corrective Action Periods to ensure adequate time to correct problems and update the system before Milestone C. Additionally, the Project Manager stated that the program is on-schedule, as of March 1, 2017, and the AMPV prototypes are meeting the performance requirements.

Our Response

While there may be inherent risks that every program experiences, the focus of this audit was the AMPV acquisition program and the report provides details pertaining to the issues specific to the program. We agree that the AMPV Project Management Office is responsible for managing the AMPV acquisition program and has been monitoring the program risks. As stated in the report, the AMPV Project Management Office has effectively managed the AMPV acquisition program through the completion of the critical design review in June 2016. However, the project management office must continue monitoring and adequately address the unresolved issues and any concerns identified during all future testing events before entering Milestone C.

Project Management Office Comments on (b)(7)(E), (b)(7)(F)

(FOUO) The Project Manager, AMPV Project Management Office, requested that the word (b)(7)(E), (b)(7)(F) be removed from the report. The Project Manager stated that the report does not provide any examples of the (b)(7)(E), (b)(7)(F) concerns and that the project management office does not anticipate concerns with the AMPV's (b)(7)(E), (b)(7)(F) based on adjustments to the requirements, analysis and performance of similar systems.

Our Response

(FOUO) We agree that the report does not provide a specific example for (b)(7)(E), (b)(7)(F) concerns. However, the project management office provided a requirements compliance document referencing a (b)(7)(E), (b)(7)(F) concern with the AMPV's (b)(3) above a specified (b)(3). According to this document, system testing would determine the impact and required corrective action.

Project Management Office Comments on (b)(7)(E), (b)(7)(F)

(FOUO) The Project Manager, AMPV Project Management Office, stated that the report assumes that (b)(3) will be required. However, the project management office will identify the impact of (b)(3) during testing and determine the need for (b)(3). The Project Manager also stated that the report does not clearly state that the capability development document requirement was adjusted to allow for (b)(3) and no further requirement adjustments are needed. Additionally, any redesign to accommodate (b)(3) will be addressed in either Low Rate Initial Production or Full Rate Production based on test results.

Our Response

(FOUO) We acknowledge that the AMPV Project Management Office has not determined whether the use of (b)(3) is necessary. The AMPV Project Management Office will make this decision based on the impact of (b)(3) determined during testing and address any redesign during production. However, program costs will increase if (b)(3) are needed after testing is completed. In addition, the report identified that the capability development document requirement was adjusted and approved by the Army Requirements Oversight Council.

Recommendations, Management Comments, and Our Response

Recommendation A

We recommend that the Project Manager, Armored Multi-Purpose Vehicle Project Management Office, monitor and adequately address concerns with performance requirements, vehicle design stability, and issues identified during all future testing events prohibiting successful completion of entrance criteria before entering Milestone C planned for 2019.

Armored Multi-Purpose Vehicle Project Management Office Comments

The Project Manager, AMPV Project Management Office agreed with the recommendation, stating that the project management office will continue to monitor and address concerns with performance requirements, vehicle design stability, and issues identified in the testing phase.

Our Response

Comments from the Project Manager addressed all specifics of the recommendation; therefore, this recommendation is resolved but will remain open. We will close this recommendation after we verify that the Project Manager has adequately addressed all current and future concerns with performance requirements and vehicle design stability that would prohibit successful completion of entrance criteria before entering Milestone C planned for 2019.

Program Executive Office, Ground Combat Systems Comments

Although not required to comment, the Deputy Program Executive Officer, Ground Combat Systems, forwarded us the response of the Project Manager, Armored Multi-Purpose Vehicle Project Management Office, and generally concurred with the report as written. For the full text of the Deputy Program Executive Officer's comments, see the Management Comments section of the report.

Finding B

Deputy Chief of Staff, G-8, Needs to Revise Procurement Quantities of the Armored Multi-Purpose Vehicle

The AMPV Project Management Office may not procure the correct quantities of AMPVs if the Army Acquisition Objective is not updated at Milestone C because Deputy Chief of Staff, G-8 officials, have not revised the procurement quantities to reflect the Army's equipment and force structure requirements changes. As a result, the AMPV acquisition program's estimated total cost and Average Procurement Unit Cost (APUC) is not accurate.

Project Management Office Risks Procuring Incorrect Quantity of Vehicles

(~~FOUO~~) The AMPV Project Management Office may not procure the correct quantity of AMPVs if the Army Acquisition Objective is not updated at Milestone C, which could impact total program costs. DoD Instruction 5000.02 places strict constraints on affordability, including affordability caps for production and sustainment costs. In December 2014, the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics approved entry into Milestone B and established a requirement that the AMPV program maintain an APUC of \$3.62 million.

The AMPV APUC is determined by dividing total procurement costs by the Army Acquisition Objective. The Army Acquisition Objective is the quantity of an item required to equip and sustain the approved Army force. At Milestone B, Deputy Chief of Staff, G-8, officials established the Army Acquisition Objective of 2,897 AMPVs based on:

- (~~FOUO~~) the force structure,¹¹ as contained in the Army 2020 Force Design;
- an estimate for training, test, and repair requirements; and
- the number of vehicles in each Armored Brigade Combat Team (ABCT) as detailed in the FY 2014 and FY 2015 Modified Table of Organization and Equipment (MTOE).

According to an official with the Deputy Chief of Staff, G-8, although the quantities are constantly changing, 2,897 AMPVs is a good estimate until it is updated at Milestone C. However, quantity increases or decreases can impact affordability constraints including total program cost and the APUC.

¹¹ The force structure reflects the current approved force and details the number of ABCTs required to meet the current Army mission.

Vehicle Procurement Quantities Have Not Been Updated

(FOUO) Deputy Chief of Staff, G-8, officials have not revised the procurement quantities to reflect the Army's updated MTOE and force structure. Although the

Army established the acquisition objective at Milestone B,

Although the Army established the acquisition objective at Milestone B, Deputy Chief of Staff, G-8, officials acknowledged the Army MTOE and force structure have changed.

Deputy Chief of Staff, G-8, officials acknowledged the Army MTOE and force structure have changed. Each AMPV has an associated procurement cost; as a result, total program costs will fluctuate with every change to the quantities of AMPVs needed to meet the MTOE and Army force structure. For example, the FY 2014 MTOE required 109 AMPVs per ABCT, while the FY 2015 MTOE required 137 AMPVs per ABCT.

Additionally, in October 2016, officials with the Deputy Chief of Staff, G-8, stated that the MTOE requirements will change again in FY 2018 and will require 131 AMPVs per ABCT.

Table 1 provides changes to the AMPV ABCT requirement based on the MTOE.

Table 1. Total Number of AMPV Models in Each ABCT

| (FOUO) MTOE by Fiscal Year | AMPV Models | | | | | Total AMPVs Per ABCT |
|-------------------------------|-----------------|-----------------|----------------|--------------------|-------------------|----------------------|
| | General Purpose | Mission Command | Mortar Carrier | Medical Evacuation | Medical Treatment | |
| 2014 | 14 | 43 | 14 | 30 | 8 | 109 |
| 2015 | 18 | 53 | 18 | 38 | 10 | 137 |
| 2018 | 16 | 55 | 18 | 32 | 10 | 131 (FOUO) |

LEGEND

ABCT Armored Brigade Combat Team
AMPV Armored Multi-Purpose Vehicle
MTOE Modified Table of Organization and Equipment

(FOUO) Furthermore, in October 2015, the Army replaced the Army 2020 Force Design with the Army Structure Memorandum 18-22 to revise the force structure, reducing the number of Army National Guard ABCTs from seven to five. Army Structure Memorandum 18-22 also changes the number of ABCTs in prepositioned stock from two to three.¹² According to officials with the

¹² The Army preposition stock and activity sets are strategically prepositioned warfighting stocks at critical worldwide locations, reducing deployment response times for expeditionary Army units.

(FOUO) Deputy Chief of Staff, G-8, the current requirement is 2,717 AMPVs based on the Army Structure Memorandum 18-22 and the updated MTOE requirements from October 2016. As a result, AMPV requirements are overestimated by 180 AMPVs valued at \$604.80 million.¹³

The MTOE and force structure are reviewed annually and Deputy Chief of Staff, G-8, officials, expect additional changes to the MTOE and force structure to occur before Milestone C. Table 2 provides a comparison between the Milestone B Army Acquisition Objective and the current requirement based on the MTOE and force structure changes.

Table 2. AMPV Requirements and Cost Comparison

| (FOUO) Army Component | Milestone B AMPV Requirements | | | Deputy Chief of Staff, G-8 AMPV Estimate | | | Total Army AMPV Difference | |
|----------------------------------|----------------------------------|--------------------|---------------------------------------|---|--------------------|---------------------------------------|-------------------------------|---|
| | Required ABCTs ¹ | Total AMPVs | Total Cost (millions) ² | Required ABCTs ³ | Total AMPVs | Total Cost (millions) ² | Total AMPVs Difference | Total Cost Difference (millions) ² |
| Active | 9 | 1,233 ⁴ | \$4,142.88 | 10 | 1,310 ⁶ | \$4,401.60 | 77 | \$258.72 |
| Preposition Stock | 2 | 274 ⁴ | 920.64 | 3 | 393 ⁶ | 1,320.48 | 119 | 399.84 |
| Activity Set | 2 | 274 ⁴ | 920.64 | 1 | 131 ⁶ | 440.16 | (143) | (480.48) |
| National Guard | 7 | 847 ⁵ | 2,845.92 | 5 | 655 ⁶ | 2,200.80 | (192) | (645.12) |
| Training, Test, and Repair | | 269 | 903.84 | | 228 | 766.08 | (41) | (137.76) |
| Total | | 2,897 | \$9,733.92 | | 2,717 | \$9,129.12 | (180) | \$(604.80) (FOUO) |

¹ (FOUO) Based on ABCT requirements from the Army 2020 Force Design.

² (FOUO) Based on December 2015 Selected Acquisition Report unit cost of \$3.36 million.

³ (FOUO) Based on ABCT requirements from Army Structure Memorandum 18-22.

⁴ (FOUO) Based on FY 2015 MTOE requirement of 137 AMPVs per ABCT.

⁵ (FOUO) Based on FY 2014 MTOE requirement of 109 AMPVs per ABCT and includes 84 National Guard vehicles outside of the ABCTs.

⁶ (FOUO) Based on FY 2018 MTOE requirement of 131 AMPVs per ABCT.

Note: values in parenthesis represent negative amounts.

LEGEND

ABCT Armored Brigade Combat Team

AMPV Armored Multi-Purpose Vehicle

MTOE Modified Table of Organization and Equipment

¹³ We calculated total costs using the current estimated AMPV unit cost of \$3.36 million documented in the December 2015 Selected Acquisition Report.

Vehicle Procurement Quantities May Increase

(FOUO) The Army plans to replace an additional 1,922 M113s used in Echelons Above Brigade.¹⁴ As of October 2016, the Army has not determined which vehicle will replace these M113s; however, the project management office stated that the AMPV could be selected as the replacement vehicle. If chosen as the replacement vehicle, an additional 1,922 AMPVs would increase total program costs by up to \$6.5 billion, and the AMPVs may require modifications that could affect the APUC.¹⁵ The Army must validate and approve the total procurement quantities included in the capabilities production document, which is a Milestone C requirement. The Deputy Chief of Staff, G-8, should update the procurement quantity for inclusion in the capabilities production document using the current Army MTOE and force structure at Milestone C.

Procurement Quantities Could Affect Vehicle Affordability

The AMPV acquisition program's estimated total cost and Average Procurement Unit Cost is not accurate if there is a significant change to the force structure. Therefore, the Army may not be accurately depicting the overall AMPV program cost submitted to Congress. Accurate program costs are necessary to ensure that the AMPV remains affordable to maintain mission capability against the threats throughout the life of the program. In addition, if the AMPV program costs are not accurate, the Army's ability to afford other programs may be affected. Since the AMPV Army Acquisition Objective was established in December 2014, changes to the MTOE and force structure will impact the estimated procurement quantities. A change in the procurement quantity could affect the APUC that may exceed the established affordability cap. APUC increases of more than 25 percent of the initial affordability cap would violate unit cost criteria set by law.¹⁶

¹⁴ Echelon Above Brigade refers to Army combat units larger than brigades—generally division and corps sized—as well as non-ABCT support brigades. Examples of echelon above brigade units that have M113s that will be replaced with AMPVs include Armored Division and Corps headquarters and Combat Engineer Brigades.

¹⁵ We calculated the \$6.5 billion increase in program costs using an AMPV unit cost of \$3.36 million as documented in the December 2015 Selected Acquisition Report.

¹⁶ Section 2433, title 10, United States Code, January 2011 (Nunn-McCurdy Act).

Management Comments on the Finding and Our Response

Project Management Office Comments on Vehicle Costs

Although not required to comment, the Project Manager, AMPV Project Management Office, stated that the report inaccurately concludes that the AMPV program is based on poor cost estimating and suggests an APUC increase, when in fact the Program Office Estimate indicates a decrease. The Project Manager stated that the report should clarify that the inaccurate program costs are based on a changing Army Acquisition Objective and a detailed cost analysis, and the amount of change is not currently known to be either an increase or decrease. Additionally, the Project Manager stated that the AMPV program will update its Army Acquisition Objective, cost position, and Acquisition Program Baseline at Milestone C.

Our Response

We agree that the inaccurate program costs are caused by the changing Army Acquisition Objective, which will also impact the APUC. Specifically, the APUC is calculated by dividing total procurement cost by the number of vehicles to be procured. Total program costs fluctuate as the procurement quantity (Army Acquisition Objective) increases or decreases; therefore, a corresponding change with the APUC. We also agree that the AMPV program should update its procurement quantity at Milestone C. However, the report does not conclude that the AMPV program is based on poor cost estimating or that the APUC increased. The report identified that the program's estimated cost and APUC are not accurate because the procurement quantities have not been updated to reflect the Army's equipment and force structure requirements changes.

Recommendations, Management Comments, and Our Response

Recommendation B

We recommend that the Deputy Chief of Staff, G-8, update the procurement quantity for inclusion in the capabilities production document using the current Army Modified Table of Organization and Equipment and force structure at Milestone C.

Deputy Chief of Staff, G-8, Management Comments

The Chief of Soldier and Maneuver Division, responding for the Deputy Chief of Staff, G-8, agreed with the recommendation, stating that the Army will update the AMPV procurement quantity for inclusion in the capabilities production document at Milestone C. The Chief of Soldier and Maneuver Division stated that the updated procurement quantity will reflect future force structure modifications. The Chief of Soldier and Maneuver Division also listed upcoming actions that will address the recommendation:

- validate Army force structure requirements and revise the Army Acquisition Objective;
- monitor AMPV testing results and address concerns; and
- provide input regarding the impacts to force structure changes and the AMPV program total cost and affordability.

Our Response

Comments from the Chief of Soldier and Maneuver Division, Deputy Chief of Staff, G-8, addressed all specifics of the recommendation; therefore, this recommendation is resolved but will remain open. We will close this recommendation after we verify that the Deputy Chief of Staff, G-8, updated the AMPV procurement quantity in the capabilities production document based on the MTOE and force structure that are in effect at Milestone C.

Appendix

Scope and Methodology

We conducted this performance audit from March 2016 through February 2017 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 interviewed AMPV program stakeholders from:

- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics;
- Office of the Secretary of Defense, Cost Assessment and Program Evaluation;
- Office of the Secretary of Defense, Director of Operational Test and Evaluation;
- U.S. Army Materiel Command;
- Assistant Secretary of the Army for Acquisition, Technology, and Logistics;
- Program Executive Office, Ground Combat Systems;
- U.S. Army Training and Doctrine Command; and
- Office of the U.S. Army Deputy Chief of Staff, Programming (G-8).

We collected, reviewed, and analyzed documents dated from March 2012 through October 2016. We reviewed the capability development documents, test and evaluation master plan, preliminary and critical design reviews, and program assessment reports.

To determine whether the Army was effectively managing the AMPV program, we compared the program planning and reporting documents with the policies and guidance in the following United States Code and DoD issuances.

- Section 2433, title 10, United States Code, "Unit Cost Reports," January 2011
- DoD Instruction 5000.02, "Operation of the Defense Acquisition System," January 7, 2015
- "Manual for the Operation of the Joint Capabilities Integration and Development System," February 12, 2015

- Army Pamphlet 70-3, "Army Acquisition Procedures," March 11, 2014
- "Defense Acquisition Guidebook," September 16, 2013

Use of Computer-Processed Data

We relied on computer-processed data obtained from the Defense Acquisition Management Information Retrieval system. The data obtained included the Selected Acquisition Report and the Defense Acquisition Executive Summary report for the AMPV. We used the reports to understand the program and to identify the AMPV's current status for cost, schedule, and performance. We validated the information by comparing the reports to acquisition documents and interviewing Office of the Secretary of Defense and AMPV project management officials. As a result, we determined that the data were sufficiently reliable for the purposes of this report.

Prior Coverage

During the last 5 years, the Government Accountability Office issued one report directly related to the AMPV program. Unrestricted Government Accountability Office reports can be accessed at <http://www.gao.gov>.

GAO

GAO-14-521R, "Department of Defense's Waiver of Competitive Prototyping Requirement for the Army's AMPV Program," April 25, 2014

DoD's rationale for waiving the competitive prototyping requirement for the AMPV program and the analysis used to support it was sufficiently substantiated.

Management Comments

Program Executive Office, Ground Combat Systems



DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
GROUND COMBAT SYSTEMS
6501 EAST ELEVEN MILE ROAD
WARREN, MICHIGAN 48397-5000

SFAE-GCS

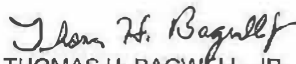
11 MAR 2017

MEMORANDUM FOR Program Director of Acquisition and Sustainment Management, Department of Defense Office of the Inspector General, 4800 Mark Center Drive, Alexandria, Virginia 22350-1500

SUBJECT: Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There Are Concerns That Could Impact Program Cost, Schedule, and Performance (Project Number: D2016-D000AT-0130.000)

1. Reference Official Draft Report, DoDIG, dated 9FEB17, SAB.
2. The Program Executive Office Ground Combat System (PEO GCS) has reviewed the subject draft report, recommendations, and related potential monetary benefits to include detailed input from the Project Manager Armored Multi-Purpose Vehicle (PM AMPV) and generally concur with the draft report as written. Our official comments are enclosed.
3. The attached Official Draft Report has been reviewed and a Request for Security Marking Review Form is enclosed.
4. Point of contact for this action is [REDACTED]

- 4 Encls
1. Security Review, 6MAR17
 2. Memo, PM AMPV, 3MAR17
 3. PM AMPV Official Comments 3MAR17
 4. DoDIG Draft Report, 9FEB17


THOMAS H. BAGWELL, JR.
Deputy Program Executive Officer,
Ground Combat Systems

Armored Multi-Purpose Vehicle Project Management Office



DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
GROUND COMBAT SYSTEMS
6501 EAST ELEVEN MILE ROAD
WARREN, MICHIGAN 48397-5000

SFAE-GCS

9 Mar 17

MEMORANDUM FOR Program Director of Acquisition and Sustainment
Management, Department of Defense Office of the Inspector General, 4800 Mark
Center Drive, Alexandria, Virginia 22350-1500

SUBJECT: Army is Effectively Managing the Armored Multi-Purpose Vehicle, but
There Are Concerns That Could Impact Program Cost, Schedule, and Performance
(Project Number: D2016-D000AT-0130.000)

1. Reference Official Draft Report, DoDIG, dated 9 Feb 17, SAB.
2. The Project Manager Armored Multi-Purpose Vehicle (PM AMPV) has reviewed the subject draft report and recommendations, and concurs with comment on the draft findings as written.
3. The findings as written are not objectionable but present an appearance that the Project Management Office and its stakeholders are not already undertaking these actions. The PMO and its stakeholders, especially Army Staff and TRADOC are actively monitoring and managing the AMPV's performance, cost, and schedule under the auspices of all applicable statutes, regulations, and policies. All parties are acutely aware of the impacts of requirements, design changes, and policy changes on the program.
4. The official comments from PM AMPV are enclosed.
5. Point of contact for this action is [REDACTED]

- 2 Encls
1. PM AMPV Official Comments
 2. Draft Report

MICHAEL W. MILNER
Colonel, U.S. Army
Project Manager,
Ground Combat Systems

ENCLOSURE 2

Armored Multi-Purpose Vehicle Project Management Office (cont'd)

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**Project Manager, Armored Multi-Purpose Vehicle (AMPV)
Project Management Office
Comments to the DODIG Report on
Army is Effectively Managing the Armored Multi-Purpose Vehicle Program
(Project No. D2016-D000AT-0130.000)**

DODIG OBJECTIVE: To determine whether the Army effectively managed the Armored Multi-Purpose Vehicle (AMPV) acquisition program.

DODIG CONCLUSION:

The Project Management has effectively managed the Armored Multi-Purpose Vehicle acquisition program through the critical design review. Specifically, the program management office has kept the Armored Multi-Purpose Vehicle within cost requirements and met scheduled timeframes. Additionally, the program management office worked with U.S. Army Training and Doctrine Command officials to develop achievable performance requirements.

(FOUO) However, Project Management Office officials may not meet entry requirements for initial production and testing (Milestone C) because they have not fully resolved vehicle performance and design demonstration concerns. For example, there are (b)(3) on the Armored Multi-Purpose Vehicle mission command model which could cause (b)(3) between vehicle systems and (b)(3)

(FOUO) As a result, the Armored Multi-Purpose Vehicle Project Management Office could experience increased costs and schedule delays while addressing concerns with vehicle performance and design demonstration. Project management office officials expect the Armored Multi-Purpose Vehicle program to start developmental testing in June 2017. However, officials stated that the initial test schedule for the program was highly dependent on a very aggressive production and delivery schedule that did not allow much time to address program delays and design changes that could increase program cost.

In addition, the Project Management Office may not procure the correct quality of Armored Multi-Purpose Vehicles because Deputy Chief of Staff, Financial management (G-8), officials have not revised the procurement quantities to reflect the changes to the Army's equipment and force structure requirements. As a result, the Armored Multi-Purpose Vehicle acquisition program's estimated total cost and Average Procurement Unit Cost is not accurate.

ADDITIONAL FACTS: The Project Management Office is charged to manage cost/schedule/performance risk and continually perform the stated actions in the recommendations. Plainly saying, the project office is already doing this. There are risks inherent and unknown to every part of managing a program. To mitigate these risks to the fullest extent possible, the AMPV Project Management Office completed a schedule risk assessment based on the latest projected prototype

Page 1 of 4

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ENCLOSURE 3

Armored Multi-Purpose Vehicle Project Management Office (cont'd)

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delivery dates and revised our test execution approach accordingly. The program schedule is baselined to minimize all possible impacts to meet the Milestone C requirements. The program schedule includes pre-planned Corrective Action Periods (CAPs) to ensure sufficient time to perform fault corrections and system updates prior to the planned Milestone C date in preparation for Low Rate Initial Production. As of this date, 1 Mar 17, the AMPV program is meeting its schedule requirements related to test execution and the prototypes being delivered are expected to meet its performance requirements. The AMPV personnel are dedicated and actively tracking the schedule and performance and are coordinating with BAE, TRADOC, DASD (SE), and HQDA DCS G-8 to ensure all decision makers are on board with needed changes that might be necessary to balance the program.

(FOUO) (1) Page i, Results in Brief, Findings Section, Para 4, final sentence the report indicates our estimated total cost and APUC is inaccurate.

(FOUO) As written, the report infers that the Army is running an ACAT ID program based on poor cost estimating, which is not accurate. It must be restated to clearly read that, based on the current Army Acquisition Objective (AAO), the estimated program and Average Procurement Unit Costs (APUC) are accurate based on detailed cost analysis from OSD CAPE, DASA-CE, HQDA DCS G-8, and PEO/PM. The inaccuracy referenced should clearly state that any inaccuracies are based on a changing AAO and the amount of the change is not precisely known to be either an increase or decrease. The report currently suggests an APUC cost increase when in fact the Program Office Estimate (POE) indicates a decrease in the APUC. The program office actively maintains a POE that accounts for all changes in program costs due to design changes, component cost increases, and/or policy (MTOE) changes. This list is not all inclusive. In the event of a significant increase in the POE or an increase in APUC that exceeds the program baseline, the PM will submit a program deviation report as required by statute. In absence of a significant increase, the AMPV program, like any other program, will update its AAO, cost position, and Acquisition Program Baseline (APB) at its next milestone planned for 2QFY19.

(FOUO) (2) Page 8– The second paragraph states "...have not fully resolved performance concerns associated with AMPV (b)(7)(E), (b)(7)(F) and (b)(7)(E), (b)(7)(F) that could prevent the vehicle from performance requirements during developmental testing."

(FOUO) Request the report strike the word (b)(7)(E), (b)(7)(F) from this statement. The report provides a reference point for the (b)(7)(E), (b)(7)(F) concern, but does not provide any references for a (b)(7)(E), (b)(7)(F) concern within the document. Nor does the program anticipate (b)(7)(E), (b)(7)(F) concerns based upon Army Requirements Oversight Committee (AROC) requirements adjustments, analysis, and similar system performance.

Page 2 of 4

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ENCLOSURE 3

Armored Multi-Purpose Vehicle Project Management Office (cont'd)

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(3) Page 9— First paragraph, the report talks about use of (b)(3) to improve performance by minimizing (b)(3)

The report mistakenly assumes that (b)(3) are required. PM AMPV will characterize the (b)(3) through test (in addition to any completed analyses), and determine if (b)(3) are needed. The report should also clearly state that the Capability Development Document (CDD) requirement was adjusted to allow for (b)(3) and no further requirement adjustments are needed. Any redesign to accommodate (b)(3) will be addressed in either Low Risk Initial Production (LRIP) or Full Rate Production (FRP) based on test results.

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Page 3 of 4

ENCLOSURE 3

Armored Multi-Purpose Vehicle Project Management Office (cont'd)

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RECOMMENDATIONS AND COMMAND COMMENTS:

For the Project Manager, Armored Multi-Purpose Vehicle (PM AMPV) Project Management Office

~~(FOUO)~~ **Recommendation A:** DoDIG recommends that the Project Manager, Armored Multi-Purpose Vehicle Project Management Office, monitor and adequately address concerns with performance requirements, vehicle design stability, and issues identified during all future testing events prohibiting successful completion of entrance criteria before entering Milestone C planning for 2019.

~~(FOUO)~~ **Project Manager Comments:** Concur, PM AMPV Project Management Office will continue to monitor and address concerns with performance requirements, vehicle design stability and issues identified in the testing phase.

Target Completion Date: 30NOV17

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Page 4 of 4

ENCLOSURE 3

Deputy Chief of Staff, G-8

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
DEPUTY CHIEF OF STAFF, G-8
700 ARMY PENTAGON
WASHINGTON DC 20310-0700

DAPR-FDD

15 March 2017

MEMORANDUM FOR RECORD

SUBJECT: Draft Report Project No. D2016-D000AT-0130.000, "Army is Effectively Managing the Armored Multi-Purpose Vehicle, but There Are Concerns That Could Impact Program Cost, Schedule, and Performance."

1. The Chief of Soldier and Maneuver Division, Deputy Chief of Staff, G-8, concurs with Recommendation B. The Army plans to update the procurement quantity for inclusion in the Capabilities Production Document for a Milestone C decision on the Armored Multi-Purpose Vehicle (AMPV) in 2QFY19. The updated procurement quantity will reflect documented force structure requirements in Army Structure Memorandum (ARSTRUC) 19-23 and any anticipated future structure modifications.
2. The following are a list of upcoming actions to address the recommendation in addition to the annual Strategic Portfolio Assessment Review, Program Objective Memorandum Development and Program Balance with Office of the Secretary of Defense Cost Analysis and Program Evaluation office.
 - a. OCT 17: validate Army force structure requirements published in ARSTRUC 19-23 and revise Army Acquisition Objective, if required.
 - b. 4QFY17: monitor results of AMPV development/testing and address any concerns at the Capabilities Production Document review and Army Requirements Oversight Council.
 - c. Annually or as required: provide input to Deputy Chief of Staff, G-3/5/7 for the Total Army Analysis process or Force Design Updates to ensure force structure changes are informed by impacts to the AMPV program total cost and affordability.
3. The HQDA, G-8 points of contact for this action are [REDACTED] and [REDACTED]

Keith A. Barclay
KEITH A. BARCLAY
COL, U.S. Army
Chief, Soldier and Maneuver Division

Acronyms and Abbreviations

| | |
|-----------------|---|
| ABCT | Armored Brigade Combat Team |
| AMPV | Armored Multi-Purpose Vehicle |
| APUC | Average Procurement Unit Cost |
| DASD(SE) | Deputy Assistant Secretary of Defense for Systems Engineering |
| MTOE | Modified Table of Organization and Equipment |
| TRADOC | U.S. Army Training and Doctrine Command |



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