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# The Army's Armored Multi-Purpose Vehicle (AMPV): Background and Issues for Congress

**Andrew Feickert**
Specialist in Military Ground Forces

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# Summary

The Armored Multi-Purpose Vehicle (AMPV) is the Army's proposed replacement for the Vietnam-era M-113 personnel carriers, which are still in service in a variety of support capacities in Armored Brigade Combat Teams (ABCTs). While M-113s no longer serve as infantry fighting vehicles, five variants of the M-113 are used as command and control vehicles, general purpose vehicles, mortar carriers, and medical treatment and evacuation vehicles. An estimated 3,000 of these M-113 variants are currently in service with the Army.

The AMPV is intended to be a "vehicle integration" or non-developmental program (candidate vehicles will be either existing vehicles or modified existing vehicles—not vehicles that are specially designed and not currently in service). Some suggest that a non-developmental vehicle might make it easier for the Army to eventually field this system to the force, as most of the Army's most recent developmental programs, such as the Future Combat System (FCS), the Crusader self-propelled artillery system, and the Comanche helicopter were cancelled before they could be fully developed and fielded.

On November 26, 2013, the Army issued a new draft Request for Proposal (RFP) for the AMPV. This latest RFP stipulates that the Army plans to award a five-year EMD contract in May 2014 worth $458 million to a single contractor for 29 prototypes. While the March 2013 RFP established an Average Unit Manufacturing Cost Ceiling for each AMPV at $1.8 million, this was rescinded to permit vendors greater flexibility. The EMD phase is scheduled to run between FY2015-FY2019, followed by three years of low-rate initial production (LRIP) starting in 2020.

The Administration's FY2014 AMPV Budget Request was $116.298 million in Research, Development, Test & Evaluation (RDT&E) funding. The FY2014 National Defense Authorization Act recommended fully funding the FY2014 AMPV Budget Request. The House Appropriations Committee recommended $86.298 million in RDT&E funding, cutting $30 million from the FY2014 Budget AMPV Request due to schedule slip. This is due to the Army's decision to move the AMPV's Request for Proposal from June 2013 to mid-September 2013. The Senate Appropriations Committee has recommended fully funding the FY2014 AMPV Budget Request.

A potential issue for Congress is should the AMPV be the Army's number one combat vehicle acquisition priority? The Congressional Budget Office (CBO) noted in a report that it might be advisable to make the replacement of M-113s with AMPVs the Army's first acquisition priority as opposed to developing the Ground Combat Vehicle (GCV). Other defense officials and analysts suggest, given current and anticipated future defense budgetary constraints, the Army's emphasis on the GCV might be unrealistic. They instead suggest a more appropriate course of action might be for the Army to shift its emphasis to the non-developmental AMPV. This report will be updated.

# Contents



## Tables



## Contacts

# Background

In early 1956, the Army began the development of an air-transportable, armored multi-purpose vehicle family intended to provide a lightweight, amphibious armored personnel carrier for armor and mechanized infantry units.[1] Known as the M-113, it entered production in 1960 and saw extensive wartime service in Vietnam. Considered a reliable and versatile vehicle, a number of different variations of the M-113 were produced to fulfill such roles as a command and control vehicle, mortar carrier, and armored ambulance, to name but a few. The Army began replacing the M-113 infantry carrier version in the early 1980s with the M-2 Bradley Infantry Fighting Vehicle, but many non-infantry carrier versions of the M-113 were retained in service. According to reports, about 3,000 M-113 variants are currently still in use.[2]

# The Armored Multi-Purpose Vehicle (AMPV)[3]

According to the Army:

> The Armored Multi-Purpose Vehicle (AMPV) is the proposed United States Army program for replacement of the M113 Family of Vehicles (FOV) to mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability by mission role variant within the Heavy Brigade Combat Team (HBCT) [now known as the Armored Brigade Combat Team – ABCT]. The AMPV will have multiple variants tailored to specific mission roles within HBCT. Mission roles are as follows: General Purpose, Medical Evacuation, Medical Treatment, Mortar Carrier, and Mission Command. AMPV is a vehicle integration program.

# The Army's AMPV Requirements[4]

Regarding the decision to replace remaining M-113s, the Army notes:

- The M-113 lacks the force protection and mobility needed to operate as part of combined arms teams within complex operational environments. For example, "commanders will not allow them to leave Forward Operating Bases (FOBs) or enter contested areas without extensive mission protection and route clearance."[5]
- The use of other vehicles for M-113 mission sets (casualty evacuations, for example) reduces unit combat effectiveness.

[1] Information in this section is taken from Christopher F. Foss, *Jane's Armour and Artillery, 2011-2012*, 32nd Edition, pp. 470-478.

[2] Tony Bertuca, "Optimism Emerges for the AMPV Program, Though Pre-RFP Work Remains," *InsideDefense.com,* August 16, 2013.

[3] From the Army's AMPV Program website, https://contracting.tacom.army.mil/majorsys/ampv/ampv.htm, accessed September 13, 2013.

[4] Information in this section is taken from an Army briefing: "AMPV Industry Day," April 23, 2013.

[5] Ibid., p. 13.

M-113s are found in Armored Brigade Combat Teams (ABCTs), where they comprise 32% of the tracked armored vehicles organic to that organization. The 114 M-113 variants in the ABCT are distributed as follows:

**Table 1. M-113 Distribution in ABCTs, by Variant**

| M-113 Variant Type | Number of M-113s |
|---|---|
| **M-113A3** General Purpose (GP) | 19 |
| **M-1068A3** Mission Command (MCmd) | 41 |
| **M-1064** Mortar Carrier (MC) | 15 |
| **M-113A3** Medical Evacuation (ME) | 31 |
| **M-577** Medical Treatment (MT) | 8 |

**Source:** Information in this table is taken from an Army briefing: "AMPV Industry Day," April 23, 2013, p. 13.

# Program Overview[6]

According to the Government Accountability Office (GAO), in March 2012, the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD, AT&L) approved a materiel development decision for AMPV and authorized the Army's entry into the materiel solution analysis phase. The Army completed the AMPV analysis of alternatives (AoA) in July 2012 and proposed a non-developmental vehicle (the candidate vehicle will be either an existing vehicle or a modified existing vehicle—not a vehicle that is specially designed and not in current service). Because the AMPV is to be a non-developmental vehicle, DOD has decided that the program will start at Milestone B, Engineering and Manufacturing Development (EMD) Phase and skip the Milestone A, Technology Development Phase.

The Army plans for a full and open competition and will award one industry bidder a 42-month EMD contract to develop all five AMPV variants. A draft Request for Proposal (RFP) released in March 2013 stated that the EMD contract would be worth $1.46 billion, including $388 million for 29 EMD prototypes for testing between 2014 and 2017 and $1.08 billion for 289 low-rate initial production (LRIP) models between 2018 and 2020. The Army had planned on releasing the formal RFP in June 2013 but instead slipped the date until mid-September 2013, citing a delayed Defense Acquisition Board review attributed in part to Department of Defense civilian furloughs.[7] Currently, the EMD contract award is planned for May 2014. The Army is also planning for an average unit manufacturing cost (AUMC) of $1.8 million per vehicle. With projected production quantities of 2,897 AMPVs, the overall AMPV program could exceed $5 billion, particularly if requirements for additional force protection are added by the Army.

[6] Information in this section is taken from the United States Government Accountability Office, Defense Acquisitions: Assessments of Selected Weapon Programs, GAO-13-294SP, March 2013, p. 133, and an Army briefing: "AMPV Industry Day," April 23, 2013 and Tony Bertuca, "Optimism Emerges for AMPV Program Though Pre-RFP Work Remains," *InsideDefense.com,* August 16, 2013.

[7] Tony Bertuca, "Army's Armored Multi-Purpose Vehicle RFP Scheduled for Mid-September," *InsideDefense.com,* August 9, 2013.

# Department of Defense (DOD) Approves AMPV Program[8]

On November 26, 2013, DOD issued an acquisition decision memorandum (ADM) officially approving the Army's entry into the Milestone B, Engineering and Manufacturing Development (EMD) Phase. The ADM directed the Army to impose an Average Procurement Unit Cost less than or equal to $3.2 million at a production rate of not less than 180 vehicles per year. In addition, operations and sustainment costs are to be less than or equal to $400,000 per vehicle per year. The Army is also directed to down select to a single prime contractor at the completion of Milestone B.

# Army Issues AMPV Request for Proposal (RFP)[9]

Also on November 26, 2013, the Army issued a new draft Request for Proposal (RFP) for the AMPV. This latest RFP stipulates that the Army plans to award a five-year EMD contract in May 2014 worth $458 million to a single contractor for 29 prototypes. While the March 2013 RFP established an Average Unit Manufacturing Cost Ceiling for each AMPV at $1.8 million, this was rescinded to permit vendors greater flexibility. The EMD phase is scheduled to run between FY2015-FY2019, followed by three years of low-rate initial production (LRIP) starting in 2020.

# Projected AMPV Production Quantities[10]

Under current plans and projected force structure, the Army plans to start full rate production of the AMPV in FY2020 at the rate of two to three ABCTs per year. Total vehicle production by variant is depicted in the following table:

**Table 2. Projected AMPV Production, by Variant**

| Variant to Be Replaced | ABCT Total | Training and Doctrine Command and Testing (See Notes) | Total Vehicles by Quantity |
|---|---|---|---|
| M-113A3 General Purpose (GP) | 462 | 58 | 520 |
| M-1068A3 Mission Command (MCmd) | 899 | 92 | 991 |

[8] Information in this section is taken from Department of Defense, "Armored Multi-Purpose Vehicle Pre-Engineering and Manufacturing Development Request for Proposals Acquisition Decision Memorandum," November 26, 2013 and Tony Bertuca, "DOD Officially OKs Army's Armored Multi-Purpose Vehicle Program; RFP Hits the Street," *InsideDefense.com,* November 26, 2013.

[9] Information in this section is taken from Solicitation, Offer, and Award: Armored Multi-Purpose Vehicle, Number: W56HZV-13-R-0022, November 26, 2013 and Tony Bertuca, "DOD Officially OKs Army's Armored Multi-Purpose Vehicle Program; RFP Hits the Street," InsideDefense.com, November 26, 2013.

[10] Information in this section is taken from an Army briefing: "AMPV Industry Day," April 23, 2013.

| Variant to Be Replaced | ABCT Total | Training and Doctrine Command and Testing (See Notes) | Total Vehicles by Quantity |
|---|---|---|---|
| M-1064 Mortar Carrier (MC) | 348 | 36 | 384 |
| M-113A3 Medical Evacuation (ME) | 736 | 52 | 788 |
| M-577 Medical Treatment (MT) | 194 | 20 | 214 |
| **Totals** | 2,639 | 258 | 2,897 |

**Source:** Information in this table is taken from an Army briefing: "AMPV Industry Day," April 23, 2013, p. 23.

**Notes:** Training and Doctrine Command (TRADOC), the Army command responsible for training the force, would use AMPVs at its various schools and courses for training soldiers. Testing AMPV quantities would be allocated to various Army and Department of Defense organizations responsible for testing vehicles.

# Potential Vendors[11]

Reports suggest the two top potential competitors for the AMPV contract are BAE Systems and General Dynamics Land Systems (GDLS). BAE is said to be offering a turretless Bradley Fighting Vehicle design and GDLS, a tracked Stryker Fighting Vehicle or a wheeled Stryker Double V-Hull Vehicle. It is not publically known if any other foreign or domestic vendors plan to compete for the AMPV contract.

# Budgetary Issues

## FY2014 AMPV Budget Request[12]

The FY2014 AMPV Budget Request was $116.298 million in Research, Development, Test & Evaluation (RDT&E) funding.

## FY2014 National Defense Authorization Act (H.R. 1960)[13]

Congress recommended fully funding the FY2014 AMPV Budget Request.

[11] Tony Bertuca, "Optimism Emerges for AMPV Program Though Pre-RFP Work Remains," *InsideDefense.com,* August 16, 2013.

[12] Department of Defense Fiscal Year (FY) 2014 President's Budget Request, Justification Book, RDT&E – Volume II, Budget Activity 54, April 2013, p. 6.

[13] FY2014 National Defense Authorization Act, Joint Explanatory Statement, http://armedservices.house.gov/index.cfm/files/serve?File_id=8A5E9112-80EF-43E1-A4E9-9AB0C0C107D8, accessed January 2, 2014.

## Department of Defense Appropriations Bill 2014 (H.R. 2397)[14]

The House Appropriations Committee recommended $86.298 million in RDT&E funding, cutting $30 million from the FY2014 Budget AMPV Request due to schedule slip. This is due to the Army's decision to slip the AMPV's Request for Proposal from June 2013 to mid-September 2013.

## Department of Defense Appropriations Bill 2014 (S. 1429)[15]

The Senate Appropriations Committee recommended fully funding the FY2014 AMPV Budget Request.

# Potential Issue for Congress

## Should the AMPV Be the Army's Number One Combat Vehicle Acquisition Priority?

The Ground Combat Vehicle (GCV) Program[16] is the Army's proposed replacement combat vehicle for the Bradley Infantry Fighting Vehicle in ABCTs and is the self-described centerpiece of the Army's overall combat vehicle modernization strategy. In terms of priority, the GCV is the Army's first combat vehicle acquisition priority, while the AMPV is the Army's second priority.[17] The Government Accountability Office (GAO) estimates GCV's total program cost at $37.923 billion.[18]

Some analysts suggest the Army's emphasis on the GCV is misguided. In the Congressional Budget Office's (CBO's) April 2013 report "The Army's Ground Combat Vehicle Program and Alternatives," CBO notes:

> As the GCV program is now constituted, the new vehicle would replace only a fraction of the Army's combat equipment. And some analysts assert that the vehicles slated for replacement are not those that should be first in line. Specifically, according to the Army's current plan, the GCVs will replace the 61 Bradley vehicles that are configured as IFVs in each of the Army's armored combat brigades. Those vehicles represent only a small portion—18 percent—of the 346 armored combat vehicles in each armored combat brigade. Moreover, armored combat brigades made up only one-third of the Army's total combat brigades at the end of 2012.

[14] H.Rept. 113-113, Department of Defense Appropriations Bill, 2014 Report of the Committee on Appropriations, June 17, 2013, p. 220.

[15] S.Rept. 113-85, Department of Defense Appropriations Bill, 2014, August 1, 2013, p. 148.

[16] For additional information on the GCV, see CRS Report R41597, *The Army's Ground Combat Vehicle (GCV) Program: Background and Issues for Congress*, by Andrew Feickert.

[17] Army Equipment Modernization Plan 2013, June 20, 2012, pp. 10-11.

[18] United States Government Accountability Office, Defense Acquisitions: Assessments of Selected Weapon Programs, GAO-13-294SP, March 2013, p. 141.

> Furthermore, the GCVs are scheduled to replace vehicles that are far from the oldest armored vehicles in the armored combat brigades. The more numerous M113- based vehicles—which constitute more than 30 percent of the armored combat vehicles in an armored combat brigade—are far older, both in terms of age of design and chronological age. The M113 was designed in the wake of the Korean War as an armored personnel carrier intended to protect soldiers from small-arms fire, artillery fragments, and the effects of nuclear weapons. Those vehicles are not worth upgrading, in the Army's estimation, and the service stopped doing so in 2007. As a result, the Army's M113-based vehicles were, on average, 13 years old at the end of 2012.[19]

Others, noting anticipated future defense budget reductions, also question the Army's combat vehicles acquisition priorities. One article suggests:

> With defense spending expected to decline, the AMPV, along with the Ground Combat Vehicles, is seen as one of the last opportunities for the Army and industry to launch a major vehicle acquisition program. The GCV, however, was dealt a setback recently when Army Chief of Staff Gen. Raymond Odierno suggested that the program might be significantly delayed or even terminated due to sequestration-driven budget cuts.[20]

Some defense officials have reportedly suggested that:

> ... the AMPV seems to be ascending at a time when the Army's top vehicle modernization priority, the Ground Combat Vehicle, appears to be on shaky ground. "AMPV is looking like it will move along; the program is simply less aggressive than GCV," one official said.[21]

There appears to be a degree of concern among some defense analysts that, given current and anticipated future defense budgetary constraints, the Army's emphasis on the GCV might be unrealistic. They instead suggest that a more appropriate course of action might be for the Army to shift its emphasis to the non-developmental AMPV, which is intended to replace the five M-113 variants that constitute 32% of ABCT's tracked combat vehicles. Because of the level of concern expressed by both government and non-government defense analysts about the priority assigned the AMPV, Congress might choose to further examine this issue with the Army.

One potential discussion could focus on a decision by the Army to replace the GCV with the AMPV as the Army's number one ground combat vehicle acquisition priority. Would such a move affect the pace of AMPV production, currently planned to reach full rate in FY2020? If reprioritizing the AMPV speeds up its fielding to the force, how much would any increase in AMPV production costs be offset by corresponding savings in M-113 Operations and Maintenance (O&M) costs, as AMPVs would be able to replace M-113s sooner than currently envisioned?

[19] Congressional Budget Office (CBO), "The Army's Ground Combat Vehicle Program and Alternatives," April 2013, p. 15.

[20] Tony Bertuca, "Army's Armored Multi-Purpose Vehicle RFP Scheduled for Mid-September,"*InsideDefense.com,* August 9, 2013.

[21] Tony Bertuca, "Optimism Emerges for AMPV Program, Though Pre-RFP Work Remains," *InsideDefense.com,* August 16, 2013.

## Author Contact Information

Andrew Feickert
Specialist in Military Ground Forces
afeickert@crs.loc.gov, 7-7673