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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While the March 2013 RFP established an Average Unit Manufacturing Cost Ceiling for each AMPV at $1.8 million, this was rescinded to permit vendors greater flexibility.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 Army's decision to provide BAE System's Bradley Fighting Vehicle to other vendors to use as they develop their own AMPV design proposals as a means of cutting program costs has resulted in claims of unfairness from General Dynamics Land Systems, which is developing its proposal based on the Stryker Combat Vehicle. General Dynamics has reportedly protested to the Army Material Command as well as approached Congress to limit funding until the Army devises what they believe is a more competitive program.

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 Consolidated Appropriations Act for FY2014 recommended $28.3 million in RDT&E funding, cutting $87.998 million from the FY2014 Budget AMPV Request due to schedule delay and an Army requested program decrease, likely related to the Army's decision to slip the AMPV's Request for Proposal from June 2013 to mid-September 2013.

The FY2015 President's budget request for the AMPV is $92.4 million in RDT&E funding. This $64 million increase from FY2014 provides for one Engineering, Manufacturing, and Development (EMD) contract, as well as program management support.

Potential issues for Congress include: Did the Army's decision to use the Bradley for design proposals create an unfair advantage?, and What are the programmatic measures in the AMPV program to ensure that the vehicle is deployable? This report will be updated.

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# 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, 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.

# Recent Program Activities

## Army Extends Request for Proposal (RFP) Response Date[11]

Reports suggest the Army extended the deadline to industry to respond to the AMPV RFP from February 24, 2014, until May 28, 2014, after General Dynamics Land Systems (GDLS)—the Stryker Combat Vehicle's manufacturer—requested additional time. The reason why this extension was granted was to permit GDLS to study the technical specifications of excess Bradley Fighting Vehicles (designated Optional Exchange Vehicles [OEVs] by the Army), which the Army has offered to vendors to use in their final AMPV production designs to "drive down" total AMPV program costs. As the Bradley is manufactured by BAE Systems—the other manufacturer vying for the AMPV contract—some Pentagon and Capitol Hill officials have reportedly suggested because of the Army's decision, BAE has an "edge" as its proposed design is being built around a turretless Bradley, whereas GDLS has proposed both tracked and wheeled designs based on its Stryker vehicle.

## General Dynamics Protests AMPV RFP[12]

General Dynamics Land Systems reportedly filed a protest on February 14, 2014, with the Army Material Command protesting the AMPV RFP. The basis of General Dynamic's protest is the program's proposed timeline as well as the use of BAE's Bradley Fighting Vehicle as the optional exchange vehicle for design development. This type of protest supposedly should be resolved within 90 days or less.

[11] Tony Bertuca, "Army's RFP Response Date for AMPV Extended After GDLS Asks for Time," *InsideDefense.com,* January 31, 2014.

[12] Tony Bertuca, "General Dynamics Protests RFP for Armored Multi-Purpose Vehicle," *InsideDefense.com,* February 20, 2014.

## General Dynamics Appeals to Congress[13]

General Dynamics has reportedly been actively lobbying Congress to intervene in the AMPV program, asking that program funding be denied until a more competitive plan is put forward by the Army. GDLS contends the RFP is biased towards BAE's Bradley Fighting Vehicle and Bradley technical data has not been provided to other potential vendors and the Army has not provided sufficient data or time for others to compete. Supposedly, GDLS is considering asking for up to a three-year program delay so they have time to process the Bradley's technical data and then adjust its bid. A program delay would run counter to the Army's efforts to accelerate the AMPV program, an effort that has taken on increasing importance due to the recent termination of the Army's Ground Combat Vehicle (GCV) program.[14]

# Budgetary Issues

## FY2014 AMPV Budget Request[15]

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

## FY2014 National Defense Authorization Act (P.L. 113-66)[16]

Congress recommended fully funding the FY2014 AMPV Budget Request.

## Consolidated Appropriations Act for FY2014 (P.L. 113-76)[17]

The Consolidated Appropriations Act for FY2014 recommended $28.3 million in RDT&E funding, cutting $87.998 million from the FY2014 Budget AMPV Request due to schedule delay and an Army requested program decrease, likely related to the Army's decision to slip the AMPV's Request for Proposal from June 2013 to mid-September 2013.

[13] Tony Bertuca, "General Dynamics Lobbies Congress to Upend Army's AMPV Program," *InsideDefense.com,* February 28, 2014.

[14]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.

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

[16] P.L. 113-66, National Defense Authorization Act for FY2014, December 26, 2013.

[17] H.R. 3547, Consolidated Appropriations Act for FY2014, (P.L. 113-76), January 17, 2014, Division C—Department of Defense Appropriations Act, 2014.

## FY2015 President's Budget Request[18]

The FY2015 President's budget request for the AMPV is $92.4 million in RDT&E funding. This $64 million increase from FY2014 provides for one Engineering, Manufacturing, and Development (EMD) contract, as well as program management support.

# Potential Issues for Congress

## Has the Army's Decision to Use Bradley Fighting Vehicles for AMPV's Optional Exchange Vehicle Created an Unfair Advantage?

The Army's decision to use excess Bradley Fighting Vehicles as an "Optional Exchange Vehicle" for use in vendor's vehicle design efforts raises a number of potential questions that Congress might chose to examine in greater detail. With both major vendors—GDLS and BAE—developing designs based on previously developed and fielded systems (the Stryker and Bradley, respectively), what program savings did the Army envision when it offered the Bradley to all vendors? Does the provision of the Bradley as an optional exchange vehicle help to accelerate the AMPV's developmental timeline or did it instead interject another program requirement that could extend the program and perhaps increase overall program costs? While the Army might have viewed the provision of the Bradley as an optional exchange vehicle as a cost-savings measure, did Army leadership consider that such a move could also give the appearance of favoritism towards BAE's Bradley design? If a potential vendor files a formal protest with the Government Accountability Office (GAO) based on a perception of unfairness or favoritism, what is the potential impact on the AMPV program should GAO rule in favor of the protestor(s)? These and other possible questions could help Congress better understand if the Army's actions have created an unfair advantage and if the AMPV program, as currently envisioned by Army leadership, is sustainable under these circumstances.

## The AMPV and the Army's Emphasis on Deployability

On February 24, 2014, during a news conference outlining his recommendations to the President for DOD's FY2015 budget, Secretary of Defense Hagel stated:

> I have also accepted the Army's recommendation to terminate the current Ground Combat Vehicle [GCV] program and re-direct the funds toward developing a next-generation platform. I have asked the leadership of the Army and the Marine Corps to deliver new, realistic visions for vehicle modernization by the end of this year.[19]

[18] Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, United States Department of Defense FY2015 Budget Request, Program Acquisition Cost by Weapon System, March 2014, p. 3-3 and U.S. Army's FY2015 Budget Briefing, March 4, 2014, p. 13.

[19] Remarks by Secretary of Defense Chuck Hagel FY2015 Budget Preview, Pentagon Press Briefing Room, Monday, February 24, 2014.

When asked to elaborate on Secretary Hagel's comments, a DOD spokesman reportedly noted:

> We found that the Ground Combat Vehicle isn't the best vehicle to replace the Bradley Infantry Fighting Vehicle, both in terms of performance and cost. While it would have protected troops inside it, it would have been too heavy and too expensive.[20]

It was also noted that industry proposed GCV variants ranging from 60 tons to 70 tons in order to meet Army protection requirements as well as the capacity to transport a nine-soldier infantry squad.[21]

The Army has reportedly stated "the service needs to become a lighter and more expeditionary force in the coming decade if it is to remain relevant to America's national security strategy" and that "the increased weight of combat vehicles is one of the areas the Army needs to address if it is to become more expeditionary."[22] While the AMPV is likely to be based on existing designs, because there are five variants planned, there is potential for the vehicle to increase in both weight and size as new features are added to the vehicles. Because the past two combat vehicles proposed by the Army—the Future Combat System's Manned Ground Combat Vehicle and the Ground Combat Vehicle—were cancelled in large part due to what was deemed excessive weight and size, Congress might decide to examine what programmatic measures are in place to ensure that the AMPV does not fall victim to its weight and size—primary factors in the AMPV's overall deployability.

## Author Contact Information

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

[20] Sebastian Sprenger and Tony Bertuca, "Combat Vehicle Axing Adds to Army's List of Programs That Went Nowhere," *InsideDefense.com,* February 26, 2014.

[21] Ibid.

[22] Tony Bertuca, "Army Futurists Continue to Ponder a Lighter, More Expeditionary Force," *InsideDefense.com,* January 24, 2014.