

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

Andrew FeickertSpecialist in Military Ground Forces

December 17, 2014

Congressional Research Service

7-5700 www.crs.gov R43240

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 Ground Combat Vehicle (GCV), 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 Request for Proposal (RFP) for the AMPV. This RFP stipulated 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the March 2013 RFP established an Average Unit Manufacturing Cost Ceiling for each AMPV at \$1.8 million, this was rescinded to permit vendors greater flexibility.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 and FY2019, followed by three years of low-rate initial production (LRIP) starting in 2020. The Army currently plans to procure 2,907 AMPVs at an estimated program cost of \$10.233 billion. The Defense Acquisition Board was reportedly to meet on December 9, 2014, to authorize the program to move to Milestone B—the EMD phase—but there have been no reports that this action has occurred.

The Army's decision to provide BAE Systems' 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. In late May 2014, General Dynamics Land Systems pulled out of the AMPV program, suggesting the Army's RFP would not allow the company to provide a competitive solution.

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.

S. 1847 authorizes full funding for the AMPV for FY2015 but limits funding to 80% until the Secretary of the Army provides congressional defense committees a report on the Army's plans to replace all M-113s at Echelons Above Brigade (EAB), as well as examining the feasibility of using wheeled AMPV medical variants in ABCTs.

A potential issue for Congress is the continuing AMPV pure versus mixed fleet debate. This report will be updated.

Contents

Background	1
The Armored Multi-Purpose Vehicle (AMPV)	1
The Army's AMPV Requirements	1
Program Overview	2
Department of Defense (DOD) Approves AMPV Program	3
Army Issues AMPV Request for Proposal (RFP)	3
Projected AMPV Production Quantities	3
Revised Projected AMPV Production Quantities	4
2014 Projected Total Program Costs	4
Recent Program Activities	5
Army Extends Request for Proposal (RFP) Response Date General Dynamics Protests AMPV RFP General Dynamics Appeals to Congress General Dynamics Decides Not to Pursue a Government Accountability Office	5
(GAO) Protest	6 6
December 2014 Milestone B Decision Budgetary Issues	
FY2015	7 7
Potential Issue for Congress Mixed AMPV Fleet Debate	
Tables	
Table 1. M-113 Distribution in ABCTs, by Variant	2
Table 2. 2013 Projected AMPV Production, by Variant	4
Contacts	
Author Contact Information.	9

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. 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.

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 Requirements⁴

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."
- 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 I. M-I I3 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 Overview⁶

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. The EMD contract award is planned for late 2014. The Army is also planning for an average unit manufacturing cost (AUMC) of \$1.8 million per vehicle.

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 Program⁸

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 and FY2019, followed by three years of low-rate initial production (LRIP) starting in 2020.

Projected AMPV Production Quantities¹⁰

Under 2013 plans and projected force structure, the Army planned 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:

0

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.

Table 2. 2013 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
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.

Revised Projected AMPV Production Quantities¹¹

GAO's March 2014 Assessment of Selected Weapons Programs report notes the new production quantity for the AMPV is 2,907 vehicles—a 10 vehicle increase over 2013 quantities. Discussions with the AMPV Program Manager revealed the 10 extra vehicles would be used for testing purposes.¹²

2014 Projected Total Program Costs¹³

For a 2,907 vehicle procurement, GAO estimates total program costs as follows (FY2014 dollars):

Research and Development: \$779.9 million.

• Procurement: \$9.443 billion.

• Estimated Total Program Cost: \$10.223 billion.

¹¹ United States Government Accountability Office, Defense Acquisitions: Assessments of Selected Weapon Programs, GAO-14-340SP, March 2014, p. 129.

¹² CRS Meeting with AMPV Program Manager, May 20, 2014.

¹³ Ibid.

Recent Program Activities

Army Extends Request for Proposal (RFP) Response Date¹⁴

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 RFP¹⁵

General Dynamics Land Systems reportedly filed a protest on February 14, 2014, with the Army Materiel Command protesting the AMPV RFP. The basis of General Dynamics' 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.

General Dynamics Appeals to Congress¹⁶

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 have not been provided to other potential vendors and the Army has not provided sufficient data or time for others to compete. Supposedly, GDLS was considering asking for up to a three-year program delay so it has 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.¹⁷

_

¹⁴ Tony Bertuca, "Army's RFP Response Date for AMPV Extended After GDLS Asks for Time," *InsideDefense.com*, January 31, 2014.

¹⁵ Tony Bertuca, "General Dynamics Protests RFP for Armored Multi-Purpose Vehicle," *InsideDefense.com*, February 20, 2014.

¹⁶ Tony Bertuca, "General Dynamics Lobbies Congress to Upend Army's AMPV Program," *InsideDefense.com*, February 28, 2014.

¹⁷For 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.

General Dynamics Decides Not to Pursue a Government Accountability Office (GAO) Protest18

On April 14, 2014, GDLS reportedly announced it would not ask GAO to rule on the AMPV program, noting that the company would instead continue to discuss the AMPV program with DOD and Congress.

Army Delays AMPV Schedule and Modifies Request for Proposals¹⁹

The Army has reportedly decided to move the award date for the AMPV System Development contract until the second quarter of FY2015. The Army will also reportedly modify the AMPV RFP to ensure the wider availability of Bradley Fighting Vehicle technical data.

General Dynamics Pulls Out of AMPV Competition²⁰

On May 28, 2014, GDLS reportedly announced it would not submit an AMPV proposal, suggesting "the requirements and other provisions of the [request for proposal] do not allow the company to provide a competitive solution."²¹ A GDLS spokesman also reportedly stated the company would not pursue a federal court decision so it would not hinder any further participation by the company in the AMPV program, possibly suggesting GDLS envisions a future role in the AMPV program. Reports also suggested Navistar Defense, which had been rumored to be considering submitting an AMPV bid, would not participate in the program.

Possible Program Acceleration²²

A BAE company spokesman reportedly stated that if the company was awarded the contract, it could accelerate the program, possibly cutting 12 months from the proposed 52-month EMD phase. BAE further notes if the Army compressed vehicle testing—based on the AMPV's commonality with the Bradley and Paladin Integrated Management System (PIMS)²³—BAE might also be able to further accelerate the program schedule.

¹⁸ "General Dynamics Opts to Skip GAO Protest Over Army Vehicle Plan," Reuters, April 15, 2014, and Tony Bertuca, "Army Delays AMPV Schedule as GDLS Forgoes GAO Protest," InsideDefense.com, April 15, 2014.

¹⁹ Tony Bertuca, "Army Delays AMPV Schedule as GDLS Forgoes GAO Protest," InsideDefense.com, April 15, 2014, and Ann Roosevelt, "General Dynamics Will Continue Talking AMPV With Army, No Further Protest," Defense

²⁰ Tony Bertuca, "General Dynamics Land Systems Bows Out of the Army's AMPV Competition," *InsideDefense.com*, May 30, 2014.

²¹ Ibid. ²² Ibid.

²³ From the BAE website: "Paladin Integrated Management System (PIMS) is the latest howitzer in the BAE Systems M109 family of vehicles, the primary indirect fire support system for the ABCTs. It uses the existing main armament and cab structure of a Paladin M109A6, and replaces the vehicle's chassis components with modem components common to the Bradley vehicle," accessed July 8, 2014.

December 2014 Milestone B Decision²⁴

The Defense Acquisition Board reportedly was to consider advancing the AMPV program to acquisition Milestone B—Engineering Manufacturing Development (EMD)—on December 9, although there have not been press reports or a DOD statement confirming this action was taken. BAE is reportedly the only known bidder for the AMPV program.

Budgetary Issues

FY2015

FY2015 President's Budget Request²⁵

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.

Rules Committee Print 113-58, House Amendment to the Text of S. 1847²⁶

S. 1847 authorizes full funding for the AMPV for FY2015 (page 1607).

SEC. 216. LIMITATION ON AVAILABILITY OF FUNDS FOR ARMORED MULTI-PURPOSE VEHICLE PROGRAM.²⁷

- (a) LIMITATION.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2015 for research, development, test, and evaluation, Army, for the armored multi-purpose vehicle program, not more than 80 percent may be obligated or expended until the date on which the Secretary of the Army submits to the congressional defense committees the report under subsection (b)(1).
- (b) REPORT.—
- (1) IN GENERAL.—Not later than March 1, 2015, the Secretary of the Army shall submit to the congressional defense committees a report on the armored multi-purpose vehicle program.

²⁴ Information in this section is from Tony Bertuca, "Army AMPV Scheduled for Dec. 9 Milestone B Decision," *InsideDefense.com*, December 2, 2014.

²⁵ Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, United States Department of Defense Fiscal Year 2015 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.

²⁶ Information in this section is taken from Rules Committee Print 113-58, House Amendment to the Text of S. 1847, [Showing the text of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015], December 2, 2014.

²⁷ Ibid., pp. 68-70.

- (2) MATTERS INCLUDED.—The report under paragraph (1) shall include the following:
- (A) An identification of the existing capability gaps of the M–113 family of vehicles assigned, as of the date of the report, to units outside of combat brigades.
- (B) An identification of the mission roles that are in common between—
- (i) such vehicles assigned to units outside of combat brigades; and
- (ii) the vehicles examined in the armor brigade combat team during the armored multipurpose vehicle analysis of alternatives.
- (C) The estimated timeline and the rough order of magnitude of funding requirements associated with complete M-113 family of vehicles divestiture within the units outside of combat brigades and the risk associated with delaying the replacement of such vehicles.
- (D) A description of the requirements for force protection, mobility, and size, weight, power, and cooling capacity for the mission roles of M–113 family of vehicles assigned to units outside of combat brigades.
- (E) A discussion of the mission roles of the M–113 family of vehicles assigned to units outside of combat brigades that are comparable to the mission roles of the M–113 family of vehicles assigned to armor brigade combat teams.
- (F) A discussion of whether a one-for-one replacement of the M–113 family of vehicles assigned to units outside of combat brigades is likely.
- (G) With respect to mission roles, a discussion of any substantive distinctions that exist in the capabilities of the M–113 family of vehicles that are needed based on the level of the unit to which the vehicle is assigned (not including combat brigades).
- (H) A discussion of the relative priority of fielding among the mission roles.
- (I) An assessment for the feasibility of incorporating medical wheeled variants within the armor brigade combat teams.

Potential Issue for Congress

Mixed AMPV Fleet Debate

Some Members have expressed concerns with the Army's current AMPV RFP. They propose the current RFP, which stipulates the selection of a single vendor, be modified so a mixed fleet (both tracked and wheeled) of AMPVs can be acquired. This could essentially make the AMPV procurement a multi-vendor effort. The Members supporting this course of action contend a mixed fleet is "sensible, sustainable, cost effective for the taxpayer, and most importantly, best for the warfighter." ²⁸

²⁸ Letter to Secretary Frank Kendall, Under Secretary of Defense for Acquisitions, Technology, and Logistics, from Rep. Mike Rogers et al., April 3, 2014.

In December 2014, a number of Members sent letters to Army and DOD leadership requesting the Army delay awarding the AMPV ambulance variant contract until after congressional defense committees have had adequate time to review congressionally mandated reports.²⁹

Other Members reportedly support continuing the pure AMPV fleet approach, noting "any changes to the AMPV acquisition will result in delays and increase costs to the program for the Army" and that "our priority is to ensure a timely procurement of a more survivable and more mobile personnel carrier for our soldiers."³⁰

Current FY2015 legislative proposals detailed in preceding sections call for further examination of the use of wheeled AMPV variants at both Echelons Above Brigade (EAB) as well as for medical evacuation purposes.

The Army contends if a mixed AMPV fleet proposal is adopted, the AMPV program could be delayed by up to three years because the current RFP would need to be pulled back and modified. ³¹ The Army also suggests such a change could cost the AMPV program an additional \$300 million.32

Given the level of debate as well as a variety of concerns expressed by Members, it is possible the issue of either a pure or mixed AMPV fleet will not be resolved in the near future. If this becomes the case, it might be possible to defer the production of the AMPV medical evacuation (ME) and medical treatment (MT) variants as well as other variants that could fall into the Echelons Above Brigade (EAB) category without a major program disruption. As part of a potential pure or mixed AMPV fleet examination, Congress could ask the Army to look at a variety of development and production scenarios which take into account different equipment fielding schedules with the intent of minimizing both cost and operational risk.

Author Contact Information

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

32 Ibid.

²⁹ Tony Bertuca, "Lawmakers Push Pentagon to Delay AMPV Award," InsideDefense.com, December 5, 2014.

³⁰ Tonv Bertuca, "Two More Senators Support BAE in AMPV Letter to Senate Appropriators," *InsideDefense.com*, June 27, 2014.

³¹ Ibid.