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The Army's Ground Combat Vehicle (GCV) Program: Background and Issues for Congress

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Summary

In April 2009, then-Secretary of Defense Gates announced he intended to significantly restructure the Army's Future Combat System (FCS) program. The FCS was a multiyear, multibillion dollar program that had been underway since 2000 and was at the heart of the Army's transformation efforts. In lieu of the cancelled FCS manned ground vehicle (MGV), the Army was directed to develop a ground combat vehicle (GCV) that would be relevant across the entire spectrum of Army operations and would incorporate combat lessons from Iraq and Afghanistan.

The Army reissued a request for proposal (RFP) for the GCV on November 30, 2010, and planned to begin fielding the GCV by 2015-2017. On August 17, 2011, the GCV program was approved to enter the Technology Development Phase of the acquisition process and, a day later, the Army awarded two technology development contracts: $439.7 million to the General Dynamics-led team and a second contract for $449.9 million to the BAE Systems-Northrop Grumman team.

Starting in May and running through June 2012, the Army tested a number of foreign candidates during a Network Integration Exercise. This test informed the Army's Analysis of Alternatives (AoA), which is a requirement before the GCV program can progress to the next developmental phase. The AoA reportedly found no suitable existing, less expensive combat vehicles that could meet the Army's GCV requirements. On January 16, 2013, the Department of Defense (DOD) initiated a series of major GCV program changes which, while slipping the program schedule to the right and going to a single competitor during Engineering and Manufacturing Development, could save over $4 billion from FY2014 to FY2019.

The Administration's January 26, 2012, Major Budget Decision Briefing not only introduced a new Asia-Pacific strategic focus, but also delayed the GCV program for a year due to the SAIC-Boeing protest. While some might consider this a setback, it might also be interpreted as an endorsement of the GCV program by the DOD.

A Congressional Budget Office report on reducing the deficit suggested that if the Army cancels the GCV program but develops and purchases upgrades for Bradley infantry fighting vehicles, outlays would decrease on net by an estimated $11 billion between 2015 and 2023. The bulk of those savings—about $9 billion—would be realized after 2018. Additional net savings of $16 billion would be realized between 2024 and 2036.

The Administration's FY2014 GCV Budget Request was $592.2 million in RDT&E funding. The FY2014 National Defense Authorization Act recommended fully funding the GCV budget request. The House Appropriations Committee recommended fully funding the GCV budget request, but the Senate Appropriations Committee recommended $423.2 million because of a variety of contract actions.

Potential issues for Congress include the Army's difficulty in establishing a precise acquisition target for the GCV due to downsizing and restructuring initiatives. Another possible area for discussion is how the GCV fits into the Army's future vision as the Army seeks to develop a lighter, more expeditionary force. With Army leadership suggesting that the GCV program might be delayed "indefinitely" due to budgetary concerns, Congress might opt to examine what procedures would be employed as well as the costs and benefits of such an action. This report will be updated.

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Introduction

In April 2009, then Secretary of Defense Robert Gates announced he intended to significantly restructure the Army's Future Combat System (FCS) program. The FCS was a multiyear, multibillion dollar program that had been underway since 2000 and was at the heart of the Army's transformation efforts. It was to be the Army's major research, development, and acquisition program, consisting of 18 manned and unmanned systems tied together by an extensive communications and information network.

Among other things, Secretary Gates recommended cancelling the manned ground vehicle (MGV) component of the FCS program, which was intended to field eight separate tracked combat vehicle variants built on a common chassis that would eventually replace combat vehicles such as the M-1 Abrams tank, the M-2 Bradley infantry fighting vehicle, and the M-109 Paladin self-propelled artillery system. As part of this restructuring, the Army was directed to develop a ground combat vehicle (GCV) that would be relevant across the entire spectrum of Army operations and would incorporate combat lessons learned in Iraq and Afghanistan.

Congressional interest in this program has been significant, as the GCV is intended to equip the Army's armored brigade combat teams (ABCT).[1] The GCV also represents the only "new start" for a ground weapon systems program and, because of the Army's history of failed weapon systems programs, current and future budget constraints, the program has been subject to a great deal of scrutiny.

GCV Program

Background: Secretary of Defense Gates's April 2009 FCS Restructuring Decision

On April 6, 2009, then Secretary of Defense Gates announced he intended to significantly restructure the FCS program.[2] The Department of Defense (DOD) planned to accelerate the spin out of selected FCS technologies to BCTs, but recommended cancelling the MGV component of the program. Secretary Gates was concerned there were significant unanswered questions in the FCS vehicle design strategy and, despite some adjustments to the MGVs, it did not adequately reflect the lessons of counterinsurgency and close quarters combat in Iraq and Afghanistan. After reevaluating requirements, technology, and approach, DOD would then re-launch the Army's vehicle modernization program, including a competitive bidding process. In addition, the acquisition decision memorandum reaffirmed the establishment of a new ground combat vehicle acquisition program in 2010.

[1] Armored Brigade Combat Teams (ABCTs) were formerly referred to as Heavy Brigade Combat Teams (HBCTs) by the Army.

[2] Information in this section is taken from a transcript of Secretary of Defense Robert M. Gates Budget Press Briefing, Arlington, VA, April 6, 2009.

The GCV Concept[3]

The Army's 2009 Modernization Strategy focused on quickly developing a new GCV in a technologically versatile approach. This approach, termed the Incremental Development Approach, featured a modular design intended to accommodate vehicle growth in size, weight, power, and cooling requirements so that as technologies matured, they could be incorporated into new versions of the GCV with little or no modification to the basic vehicle.

The original GCV concept, in short, was to

- field the GCV by 2015-2017;
- design the platform with sufficient margin for future capabilities;
- incorporate only mature technologies for vehicle integration;
- maintain a continuous armor development; and
- design the vehicle to accept current and future network capabilities (for example, radios, sensors, and jammers).[4]

Army leadership had indicated the GCV could be either a tracked or wheeled vehicle. The Army had also suggested it saw "a lot of value in common chassis in terms of logistics support," and that it might pursue a common chassis for GCV variants.[5] Other possible GCV features discussed by the Army included a V-shaped hull and side armor to protect against improvised explosive devices (IEDs).[6] The Army also suggested the GCV would be fuel efficient.[7] The air transportability of the GCV has been discussed as a key design consideration, and the Army had said the GCV must be able to fit on C-17 transports.[8] In order for the GCV to be a "full spectrum" combat vehicle, the Army reportedly had required non-lethal weapon systems be incorporated into vehicle design. While the GCV is to have some military equipment directed by the Army, such as radios and chemical protection systems, Army officials are leaving most of the specific solutions to industry recommendations.[9]

The Initial GCV Request for Proposal (RFP)[10]

On February 25, 2010, the Army released the RFP for the GCV as described in the following DOD press release:

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[3] Information in this section is from the Army Capabilities Integration Center, *The Ground Combat Vehicle Strategy: Optimizing for the Future,* October 2009, available at http://www.g8.army.mil.

[4] Department of the Army, *2009 Army Modernization White Paper*, p. 5.

[5] Emelie Rutherford, "Army Casting Wide Net for Post-FCS Vehicles Coming in Five to Seven Years," *Defense Daily*, May 13, 2009.

[6] Ibid.

[7] John T. Bennett, "Carter: FCS Successor Effort Could Have Many Primes," *Defense News*, May 18, 2009.

[8] Marjorie Censer and Kate Brannen, "Army Assessing Brigade Combat Modernization in Plan Due to OSD," *InsideDefense.com*, May 18, 2009.

[9] Daniel Wasserbly, "Testing Pushed Back to Next Summer: Army to Reprogram Funding in FY 08, FY 09 for FCS Spin Out 1 Changes," *InsideDefense.com,* June 30, 2008.

[10] DOD defines Request for Proposal (RFP) as a solicitation used in negotiated acquisition to communicate government requirements to prospective contractor and to solicit proposals.

Army Ground Combat Vehicle Request for Proposal Released[11]

> The Army released last Thursday a RFP for the technology development phase[12] of the Infantry Fighting Vehicle being developed under the GCV effort. The Army has worked extensively with the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics to develop this program. The GCV acquisition program will follow DOD best acquisition practices and be a competitive program with up to three contract awards. The GCV development effort will consist of three phases: technology development, engineering and manufacturing design and low rate initial production. The Army anticipates awarding the first contracts for the technology development phase in the fourth-quarter of fiscal 2010.
>
> The technology development phase involves risk reduction, identification of technology demonstrations, competitive prototyping activities, and planned technical reviews. Industry will have 60 days to submit proposals to the Army for this development effort.
>
> The Ground Combat Vehicle effort is part of a holistic Army plan to modernize its combat vehicle fleet. This includes incorporating Mine-Resistant Ambush Protected (MRAP) vehicles into the fleet while modernizing current vehicle fleets including Stryker. The first GCV will be an Infantry Fighting Vehicle offering a highly-survivable platform for delivering a nine-man infantry squad to the battlefield. The GCV is the first vehicle that will be designed from the ground up to operate in an IED environment. It is envisioned to have greater lethality and ballistic protection than a Bradley, greater IED and mine protection than an MRAP, and the cross country mobility of an Abrams tank. The GCV will be highly survivable, mobile and versatile, but the Army has not set specific requirements such as weight, instead allowing industry to propose the best solution to meet the requirements.
>
> Prior to the release of the RFP, the Army engaged with industry through a series of industry days to inform them of the government's intent for GCV development and gain their feedback from potential contractors about GCV requirements and emerging performance specifications. In response to these initiatives the Army received significant feedback and insights on requirements, growth, training, test and the program at large thereby informing the requirements process and indicating the potential for a competitive contracting environment.

Selected Program Activities

Potential GCV Vendors[13]

In response to the Army's February 2010 RFP, three industry teams submitted technology development proposals to the Army. The first team included BAE Systems and Northrop Grumman; the second consisted of General Dynamics, Lockheed Martin, Raytheon, and MTU Detroit Diesel; and the third team, SAIC, Boeing, and the German firms of Krauss-Maffei

[11] DOD News Release, "Army Ground Combat Vehicle Request for Proposal Released," No. 161-10, March, 2, 2010.

[12] From the November 2009 Defense Acquisition University Glossary of Defense Acquisition Acronyms & Terms, the Technology Development (TD) Phase is the second phase of the Defense Acquisition Management System and the purpose of this phase is to reduce technology risk and to determine the appropriate set of technologies to be integrated into the full system.

[13] Information in this section is taken from Defense Professionals, "Three Competing Teams to Submit Proposal for Technology Development Phase," *Defpro.com*, May 26, 2010.

Wegmann (KMW) and Rheinmetall Defence. All three teams also had a number of other firms as part of their teams. The BAE Systems-led team design was an original design, with the team claiming that its design would exceed the survivability of the MRAP and would have enhanced mobility capabilities to allow it to operate in both urban and cross country environments. The General Dynamics team provided no details on its technical approach but stated its chosen design focused on soldier survivability and operational effectiveness and would incorporate mature technologies. The SAIC-led team stated its design would be based on the German tracked Puma IFV that was developed based on lessons learned from Iraq and Afghanistan. SAIC also emphasized all work, including production, would take place in the United States.

Army Cancels the RFP

When the Army released the RFP for the GCV Technology Development (TD) phase in February 2010, it anticipated awarding the first TD phase contracts in the fourth quarter of FY2010.[14] On August 25, 2010, while the Army was reportedly in the process of selecting the winners of the TD RFP, the Army's new Assistant Secretary of the Army for Acquisition, Logistics and Technology [ASA(ALT)], Malcolm O'Neil, cancelled the RFP in order to provide more time for technology integration as well to insure the Army would use mature technologies in order to develop the GCV within the established seven-year time frame.[15] The Army reportedly planned to reissue the RFP within 60 days of the cancellation.[16] It was expected the original industry teams would submit new proposals and other companies might also submit proposals.

Why the RFP Was Cancelled

The Army, in conjunction with the Pentagon's acquisition office, conducted a Red Team[17] review of the GCV program in order to "review GCV core elements including acquisition strategy, vehicle capabilities, operational needs, program schedule, cost performance, and technological specifications."[18] This review found the GCV had too many performance requirements and too many capabilities to make it affordable[19] and relied on too many immature technologies. In response, the Army pledged the new GCV RFP would "dial back the number of capabilities the new system must have—as well as significantly reworking the acquisition strategy by focusing on early technology maturity and setting firm cost targets."[20] In particular the Army reportedly

[14] DOD Press Release, "Army Ground Combat Vehicle Request for Proposal Released," March 2, 2010.

[15] Kate Brannen, "Interview: Malcolm O'Neil, Acquisition Executive, U.S. Army," *Defense News,* September 6, 2010, p. 22; and Daniel Wasserbly, "U.S. Army Amends Approach to GCV Programme," *Jane's Defence Weekly,* September 1, 2010, p. 9.

[16] Daniel Wasserbly, "U.S. Army Amends Approach to GCV Programme," *Jane's Defence Weekly,* September 1, 2010, p. 9.

[17]The Army defines Red Teaming as a "structured, iterative process executed by trained, educated and practiced team members that provides commanders an independent capability to continuously challenge plans, operations, concepts, organizations and capabilities in the context of the operational environment and from our partners' and adversaries' perspectives." Taken from Office of the Chief of Public Affairs, U.S. Army Training and Doctrine Command, "Army Approves Plan to Create School for Red Teaming," July 13, 2005.

[18] Roxana Trion, "Army to Re-Start Bidding Process for New $40B Ground Combat Vehicle Program," *The Hill,* August 25, 2010.

[19] Kate Brannen, "Ground Combat Vehicle Delayed; Effort Called Too Ambitious," *Army Times,* September 6, 2010.

[20] Jason Sherman, "Army to Mandate Technology Maturity Levels, $10 Million Price Target for GCV," *InsideDefense.com,* September 16, 2010.

planned to set a $10 million per vehicle cost limit in response to reports that initial estimates projected that the GCV would cost more than $20 million per vehicle.

Revised GCV RFP Issued

On November 30, 2010, the Army issued a revised GCV RFP.[21] Under this proposal, industry had until January 21, 2011, to submit proposals and the proposed vehicle could be tracked or wheeled. The Army included affordability targets of per unit cost for the vehicle between $9 million and $10.5 million and an operational sustainment cost of $200 per operational mile, with both affordability targets being in FY2010 dollars. In addition, the Army will require the GCV fit on a C-17 transport but not on a C-130. The Army was expected to award technology development contracts to three contractors by April 2011, and the Technology Development (TD) Phase is planned to last 24 months. An early prototype vehicle is expected by the middle of FY2014 and the first full-up prototype is expected by the beginning of FY2016. The Army planned for 1,874 GCVs initially, with the first production vehicle rolling off the assembly line in early April 2018, and the first unit should be equipped with GCVs in 2019.

The new RFP is a fixed price incentive fee contract versus the cost-plus fixed fee contract of the previous RFP.[22] The new contract has a ceiling of $450 million per contractor for the TD Phase. An incentive fee would split 80% to the government if the cost comes in under the negotiated $450 million ceiling cap, with 20% going to the contractor. If the cost comes in over the cap, the contractor assumes 100% of the additional cost.

Defense Industry Concerns with the Revised RFP[23]

Reports suggest defense industry had a number of concerns with the revised RFP. According to one report "industry still doesn't get what the Army is looking for,"[24] suggesting many of the technical specifications the contractors expected the Army to spell out were left open-ended and industry would have to propose many of the vehicle's technologies and features. Another concern was industry was not clear on how many vehicles the Army intended to build and questioned whether the Army could afford the production in the long run. According to the Army, the GCV is intended to replace infantry fighting vehicles in ABCTs, which would be 50% of the Bradleys in the ABCT. Some analysts suggest the GCV's price tag per vehicle could make it vulnerable to future budget cuts, with one analyst noting the cost was so high "the program is sure to be politically controversial and therefore suffer much the same fate the Marine Corps Expeditionary Fighting Vehicle (EFV) has."[25]

[21] Unless otherwise noted, information in this section is taken from C. Todd Lopez, "Army Issues RFP for Ground Combat Vehicle," Army News Service, December 2, 2010.

[22] Information in this section is taken from Ann Roosevelt, "New Ground Combat Vehicle RFP Offers Affordability Targets," *Defense Daily,* December 1, 2010.

[23] Information in this section is taken from Kate Brannen, "U.S. Army: Budgets Allow $9 – 10.5 Million GCV," *Defense News,* December 13, 2010; and Grace V. Jean, "Army's Ground Combat Vehicle Stirs Confusion in Industry," *National Defense,* January 2011 edition.

[24] Kate Brannen, "U.S. Army: Budgets Allow $9 – 10.5 Million GCV." Ibid.

[25] Ibid. For additional information on the Expeditionary Fighting Vehicle see CRS Report RS22947, *The Marines' Expeditionary Fighting Vehicle (EFV): Background and Issues for Congress*, by Andrew Feickert.

Because of concerns the GCV program would not make it to production, issues regarding sustaining the industrial base have been raised. Analysts contend there are very few new combat vehicles currently in production, noting that Bradley A3 production would end in 2012; the last Stryker armored personnel carrier in 2013; and the M-1 Abrams tank remanufacturing program was slated to end after 2014, leaving the improved Paladin self-propelled howitzer in production until the GCV starts production in 2017. Even though congressional action will keep the Abrams production line open, some defense industry analysts are concerned that with so few opportunities to develop and manufacture armored fighting vehicles, some long-standing U.S. defense firms might drop out of the business, thereby limiting bidding on any future armored fighting vehicle programs to foreign manufacturers.

Defense Acquisition Board Approves GCV Entrance into Technology Development Phase[26]

On August 17, 2011, then Pentagon acquisition chief Ashton Carter signed an acquisition decision memorandum authorizing the Army to award technology demonstration contracts for the GCV program. Secretary Carter also directed the Army to conduct a "dynamic update" of the GCV's Analysis of Alternatives (AoA), which had been criticized by some as being inadequate. Secretary Carter also stipulated:

- The GCV average procurement unit cost (APUC) would be less than or equal to $13 million (expressed in FY2011 constant dollars);
- Combined cost of replenishment spares and repair parts less than or equal to $200 per mile (expressed in FY2011 constant dollars); and
- Seven years from technology development contract award to first production vehicle.

Army Awards Technology Development (TD) Contracts[27]

On August 18, 2011—a day after Secretary Carter issued his acquisition decision memorandum—the Army awarded two technology development contracts. The first contract for $439.7 million went to the General Dynamics-led team and the second contract for $449.9 million went to the BAE Systems-Northrop Grumman team. The technology development phase is expected to last 24 months (not counting the period the contract was under protest). In April 2013, General Dynamics was reportedly awarded $180 million to extend the TD phase by six months and BAE was awarded $160 million for a six-month extension.[28]

[26] Memorandum, Ground Combat Vehicle (GCV) Infantry Fighting Vehicle (IFV) Milestone (MS) A Acquisition Decision Memorandum, August 17, 2011.

[27] Ann Roosevelt, "Army GCV Program Kicks Off – Emphasizes Affordability, Capability," *Defense Daily,* August 22, 2011.

[28] Tony Bertuca, "Army Awards GCV Extension Contracts to GDLS, BAE Systems," *InsideDefense.com,* April 23, 2013.

SAIC-Boeing Team Files Protest Over GCV TD Contract Award[29]

On August 23, 2011, the third team vying for the GCV TD contract, SAIC-Boeing, filed a protest with the Government Accountability Office (GAO) contending there were errors in the evaluation process, claiming the government relied on evaluation criteria outside the published request for proposal and aspects of the team's bid were discounted because of a lack of familiarity with the German Puma infantry fighting vehicle that forms the basis of the SAIC-Boeing vehicle. Because of the protest, the General Dynamics and BAE Systems-Northrop Grumman teams were required to stop work until the protest was adjudicated.

GAO Denies SAIC-Boeing Team Protest[30]

On December 5, 2011, GAO denied the SAIC-Boeing GCV protest, stating the Army's award of only two TD contracts was reasonable and consistent with the stated evaluation criteria and did not improperly favor the other two teams in the competition. On December 6, 2011, the Army lifted the stop-work order that had been placed on the General Dynamics and BAE Systems-Northrop Grumman teams so work could resume on the GCV.

Reported Reasons Why the SAIC-Boeing Team Was Not Selected[31]

Reports suggest that the SAIC-Boeing GCV proposal was rejected by the Army primarily due to concerns over the vehicle's proposed force protection features. The Army's primary concern appeared to have been the vehicle's proposed active protection system[32] and the underbody armor designed to protect crewmembers from IEDs. As part of GAO's examination of the protest, it was noted that the Army:

> Identified 20 significant weaknesses and informed SAIC that it was "of utmost importance" for the firm to address them, and that a failure to do so adequately would result in SAIC's proposal being found ineligible for award.[33]

When the Army asked SAIC to provide more information on underbody armor, SAIC responded the information was classified and was the property of the German Ministry of Defense (MOD). While SAIC and the German MOD offered potential solutions, the Army judged these as inadequate to address its concerns. There were also additional Army concerns—such as

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[29] Sebastian Sprenger, "SAIC-Boeing Team Files Protest Over Ground Combat Vehicle Award," *InsideDefense.com,* August 26, 2011, and Tony Bertuca, "Army Stops Work on GCV Due to Protest," *InsideDefense.com,* August 30, 2011.

[30] Brendan McGarry and Danielle Ivory, "SAIC Loses Bid Protest for U.S. Army Ground Combat Vehicle," *Bloomberg.com,* December 5, 2011, and GAO Decision, Scientific Applications International Corporation, B-405612; B-405612.2; B-405612.3, December 5, 2011, http://www.gao.gov/assets/590/587607.pdf.

[31] Information in this section is from Sebastian Sprenger, "GAO: Force Protection Features Cost SAIC-Boeing in GCV Competition," *InsideDefense.com,* January 13, 2012; Tony Bertuca, "OSD to Brief Congress on Active Protection Systems Testing in March," *InsideDefense.com,* January 20, 2012; and GAO Decision, Scientific Applications International Corporation, B-405612; B-405612.2; B-405612.3, December 5, 2011, http://www.gao.gov/assets/590/587607.pdf.

[32] In this context, an active protective system or APS is a system which will automatically detect and engage incoming rocket-propelled grenades and anti-tank guided and unguided missiles.

[33] GAO Decision, Scientific Applications International Corporation, B-405612; B-405612.2; B-405612.3, December 5, 2011, http://www.gao.gov/assets/590/587607.pdf, pp. 5-6.

insufficient head clearance for crew members, problems with vehicle occupant seating, a risk of toxic fumes in the crew compartment due to battery pack location, and various hazards affecting a soldier's ability to exit the rear of the GCV—that played a role in GAO's denial of SAIC's protest.

Recent Program Activities

DOD Initiates Major GCV Program Changes[34]

On January 16, 2013, the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD AT&L) Frank Kendall issued an Acquisition Decision Memorandum and an accompanying information memorandum detailing major changes to the GCV program to "enable a more affordable and executable program." These changes include the following:

- The Technology Demonstration (TD) phase is extended for six months to enable contractors the ability to modify their designs in support of the requirement modifications to the Capability Development Document (CDD). While the contracts for the original 24 month TD were firm fixed price, the parallel work during this phase from the Analysis of Alternatives, Non Developmental Item (NDI) evaluations, and trade space evaluations with the contractors have provided opportunities to modify the requirements for a more affordable and executable GCV design. The additional six months in TD enables the contractors to complete preliminary designs that represent what we really want to produce.
- The Engineering and Manufacturing Development (EMD) plan is to award both EMD and production options to a single vendor. This single change saves the department nearly $2.5 billion in RDT&E resources. Milestone B will remain as a full and open competition for the EMD phase of the GCV Infantry Fighting Vehicle Program and allows other vendors (including non U.S. NDI product based vendors) to propose modified NDI vehicles.
- In support of full and open competition resulting in a single award for EMD, the Army's previously planned procurement of long lead materials for test rigs and production prototypes is not authorized at this time. This decision eliminates spending scarce resources on incomplete designs and is consistent with our full and open competitive intent.
- Lastly, in support of the schedule risk associated with the integration during EMD and the six month TD extension, I have directed Milestone C to move from FY2018 to FY2019 and the associated re-phasing of procurement dollars. I will drive this program to hold this schedule to the maximum extent possible; this shift is both more affordable and executable.

[34] Unless otherwise noted, information in this section is taken from Frank Kendall, Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L), Ground Combat Vehicle Infantry Fighting Vehicle Acquisition Decision Memorandum and Information Memorandum: Ground Combat Vehicle Program both issued on January 16, 2013.

- All of these changes, when supported with the approval of the requirements changes for the CDD under review, will save a total of $4+ billion over the FYDP [Future Year Defense Plan—FY2014-FY2019].[35]

The major changes include extended the current TD phase by six months, permitting only a single contractor to proceed to the GCV's EMD phase and postponing the program's Milestone C production decision until FY2019, almost a year longer than the previously planned early FY2018 Milestone C decision. There have been concerns expressed by some that designating only one EMD contractor will eliminate cost savings from competition and extending the TD phase by six months and the Milestone C decision by up to a year will add cost to the program.[36]

Congressional Budget Office (CBO) Report: Options for Reducing the Deficit: 2014 to 2023[37]

In November 2013, CBO published a report describing options for reducing the federal budget deficit. Included in these proposed options was cancelling the GCV program. Details on CBO's proposal are as follows:

> **Note:** This option would take effect in October 2014. Estimates of savings displayed in the table are based on the fiscal year 2014 Future Years Defense Program and the Congressional Budget Office's extension of that program.
>
> The Ground Combat Vehicle (GCV) program is the Army's latest attempt to design and field a new combat vehicle. Army officials have stated that the service needs a vehicle large enough to carry and protect a full squad of nine infantry soldiers at one time, and the Army plans to use the GCV to replace the Bradley Infantry Fighting Vehicles (IFVs) in its armored combat brigades. To meet its goal of producing GCVs beginning in 2019, the Army estimates it would require appropriations of about $4.0 billion from 2014 through 2018: $3.8 billion for development—that is, to design, test, and evaluate the vehicle—and almost $300 million to procure the items needed to begin production. Starting in 2019, the Army could need more than $2 billion in funding annually to purchase 150 GCVs each year.
>
> Under this option, the Army would cancel the GCV program but develop and purchase upgrades for Bradley IFVs, decreasing outlays on net by $11 billion between 2015 and 2023, the Congressional Budget Office estimates. The bulk of those savings—about $9 billion—would be realized after 2018. Additional net savings of $16 billion would be realized between 2024 and 2036. Because the GCV program is in its early stages, the estimated savings are less certain than those that could be estimated for canceling an acquisition program already in production. In particular, CBO cannot predict what trade-offs in cost, schedule, and vehicle performance the Army would make within the GCV program if it continued with the acquisition process. Any trade-offs that might be made could affect the overall cost of the program and, thus, the amount of savings from cancellation.

[35] Quoted directly from USD (AT&L) Information Memorandum: Ground Combat Vehicle Program, January 16, 2013.

[36] Tony Bertuca, "Pentagon Affirms Major GCV Program Changes for Billions in Savings," *InsideDefense.com,* January 17, 2013, and Ann Roosevelt, "Fiscal Pressures to Stretch Army GCV Technology Development by Six Months," *Defense Daily,* January 18, 2013.

[37] Congressional Budget Office: Options for Reducing the Deficit: 2014 to 2023, November 13, 2013.

An argument in favor of this option is that the GCV, although more capable than existing vehicles when operating in an open battle space, is too large and heavy to operate effectively in congested areas with limited space to maneuver; such conditions were common in Iraq and Afghanistan and are likely to occur in the future. In contrast, the Bradley IFV is significantly smaller and lighter than the GCV and could be a better choice for potential future conflicts. Furthermore, because the Army plans to replace less than 20 percent of its armored vehicles with GCVs, it will continue to rely on vehicles that it currently uses to equip its forces—including various versions of the Bradley fighting vehicles and Abrams tanks—for decades to come. In fact, the Army has invested $14 billion since 2004 to upgrade its Bradley fighting vehicles and Abrams tanks, and it plans to retain and continue upgrading them for several decades. By keeping the infantry version of its Bradley fighting vehicles, rather than replacing them with GCVs, the Army would avoid the risk and expense associated with developing and purchasing a fleet of new vehicles.

An argument against this option is that it would prevent the fielding of a combat vehicle with greater capabilities than those currently available and better able to meet the demands of future operations. For instance, the Bradley IFV cannot carry its own crew and a full infantry squad at the same time—but keeping a squad together, which the GCV would allow, would facilitate tactical planning while the force was moving. That capability would allow a squad to better synchronize its actions when it left the vehicle. In addition, the greater protection afforded by the GCV—especially against improvised explosive devices—would enhance the safety of soldiers who conduct the types of close operations among civilian populations that are becoming increasingly common. By contrast, Bradley vehicles do not have modular armor kits that can be adapted to meet a range of threats, and they lack extra capacity to accept new systems that might improve survivability or capability.

A further argument against this option is that the Army has not fielded a new combat vehicle since the early 1990s. Canceling the GCV program would mean that the Army would continue to use systems originally developed in the 1980s or earlier (although those systems have been updated several times since then). Improving the data processing and connectivity of those older systems would require that newer components be integrated into older frames, which can be a difficult and potentially expensive process. (Such costs are not included in the above estimates.) Finally, retaining old systems might eventually cause the Army to lose its technological edge and compromise the service's dominance on the battlefield.[38]

FY2014 Legislative Activity

FY2014 Budget Request[39]

The FY2014 Budget Request for the GCV was $592.2 million for Research, Development, Test and Evaluation (RDT&E).

[38] Ibid., p. 64.

[39] Assistant Secretary of the Army (Financial Manager and Comptroller), U.S. Army FY 2014 President's Budget Highlights, April 2013.

FY2014 National Defense Authorization Act (H.R. 1960)[40]

The FY2014 National Defense Authorization Act recommended fully funding the Administration's budget request. The Joint Explanatory Statement accompanying the act included the following legislative language:

> **Limitation on Availability of Funds for Ground Combat Vehicle Engineering and Manufacturing Phase (Sec. 212)**
>
> The House bill contained a provision (Sec. 211) that would prohibit the Army from obligating post-Milestone B funds for the Ground Combat Vehicle (GCV) program until the Secretary of the Army submits a report to the congressional defense committees. The Senate committee-reported bill contained no similar provision. The agreement includes this provision with technical and clarifying amendments. Additionally, the Comptroller General of the United States is directed to submit to the congressional defense committees a report setting forth an assessment by the Comptroller General of the study of the Army on the Bradley Fighting Vehicle industrial base submitted to Congress pursuant to the Conference Report to accompany H.R. 4310 (112th Congress), the National Defense Authorization Act for Fiscal Year 2013 (H.Rept. 112-705).
>
> The report required shall include an assessment of the reasonableness of the study's methods including, but not limited to, the sufficiency, validity, and reliability of the data used to conduct the study, and include findings and recommendations, if any, on the combat vehicle industrial base. In conducting this review the Comptroller General should not replicate the Army study.[41]

Department of Defense Appropriations Bill, 2014[42]

The House Appropriations Committee recommended fully funding the FY2014 GCV budget request.[43] The Senate Appropriations Committee recommended $423.2 million in RDT&E funding, noting:

> **Ground Combat Vehicle (GCV):** The fiscal year 2014 budget request includes $592,201,000 for the Ground Combat Vehicle. The program was restructured earlier this year using previously appropriated funds. As part of the program's restructure, the Army awarded two undefinitized contract actions [UCAs] in April 2013, which it plans to definitize by December 2013. The Committee notes the historically measurable cost growth of UCAs on development programs, as restated in the Department's 2013 annual report on the performance of the Department of Defense acquisition system. The Army has budgeted over $140,000,000 for these contracts in fiscal year 2014, which due to the fiscal year 2013 funds already applied to the UCAs is excess to stated requirements.

[40] FY2014 National Defense Authorization Act, Joint Explanatory Statement, http://armedservices.house.gov/index.cfm/files/serve?File_id=8A5E9112-80EF-43E1-A4E9-9AB0C0C107D8, accessed December 27, 2013.

[41] Ibid., pp. 13-14.

[42] Information in this section is taken from H.Rept. 113-113, Department of Defense Appropriations Bill, 2014, Report of the Committee of Appropriations, June 7, 2013 and S.Rept. 113-85, Department of Defense Appropriations Bill, 2014, August 1, 2013.

[43] H.Rept. 113-113, Department of Defense Appropriations Bill, 2014, Report of the Committee of Appropriations, June 7, 2013, p. 5.

> Therefore, the Committee recommends a reduction of $99,000,000 to the budget request for undefinitized contract actions. In addition, the Army is planning to spend over $470,000,000 over the next 3 fiscal years for the fabrication of 12 GCV prototypes. While the Committee recognizes the value of certain prototype activities during the development phase of the program, the acquisition strategy and funding profile would expend close to $40,000,000 per individual prototype vehicle. Therefore, the Committee denies the $70,000,000 requested for prototypes in fiscal year 2014. The Committee notes that none of these adjustments affect the Government program office, nor do they impede the Army's ability to award the GCV engineering and manufacturing development contract in September 2014, as planned.[44]

Potential Issues for Congress

How Many GCVs Does the Army Intend to Procure?

The Army had originally planned to procure 1,874 GCVs, but the Army's June 25, 2013, decision to eliminate 12 BCTs and add a third maneuver battalion to armor and infantry BCTs, as well as a variety of other organizational changes, has likely decreased the Army's GCV requirements.[45] Some defense experts suggest the Army might cut additional BCTs over the next few years, further reducing the GCV requirement. This situation suggests the Army will have a difficult time over the next few years establishing a credible procurement target for the GCV. Without a stable procurement target for the GCV, overall program and per vehicle costs will likely remain in flux, thereby complicating budget decisions not only related to the GCV, but the Army's entire ground vehicle portfolio.

How Does the GCV Fit into the Army's Future Plans?[46]

Reports suggest that as the Army contemplates its future, the GCV might not figure as prominently as it once did. As recently as the summer of 2013, the GCV was the Army's stated number one acquisition priority.[47] During a recent seminar examining the Army of the future, it was reportedly proposed that "mobile protected firepower," such as in the form of a light, air-droppable combat vehicle like the Stryker or Armored Gun System, would better support the lighter, more expeditionary force the Army is expected to pursue as it reorganizes itself for the future. If this is the case, then the GCV may play a much more limited role in Army's future operational plans than was envisioned in the past.

[44] S.Rept. 113-85, Department of Defense Appropriations Bill, 2014, August 1, 2013, p. 152.

[45] For additional information on Army force structure cuts see CRS Report R42493, *Army Drawdown and Restructuring: Background and Issues for Congress*, by Andrew Feickert.

[46] Tony Bertuca, "Questions Continue to Hang Over Army's Future Vehicle Strategy," *InsideDefense.com,* November 27, 2013.

[47] Tony, Bertuca, "Lawmakers Probe Army Leaders On Combat Vehicle Programs," *InsideDefense.com,* May 13, 2013.

What If the GCV Is Delayed?[48]

Army leadership has reportedly suggested that in light of sequestration and ongoing budgetary pressures, that the GCV program might be delayed "indefinitely." One scenario that has been discussed would be to discontinue the GCV program at some point in the summer of 2014 without picking a winner between General Dynamics Land Systems and BAE to proceed into the Engineering and Manufacturing Development phase. While it is not known how long the GCV program would "frozen" in technology development, the Army supposedly believes budgetary pressures will likely ease in FY2018 or FY2019, permitting the GCV to move forward. One potential advantage of this course of action is the Army should have a better sense of how many GCVs it will need as most of the Army's major reorganizational efforts should be completed by FY2018. A possible disadvantage, however, could be a longer period of time needed to field the GCV to units, as well as a higher per-vehicle and overall program costs typically associated with programs that "slip to the right." Because of the somewhat ambiguous nature of the Army's plans for the GCV, Congress might choose to examine the procedures the Army would use to "freeze" the GCV program and the associated costs and benefits of such a course of action.

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[48] Tony Bertuca, "Questions Continue to Hang Over Army's Future Vehicle Strategy," *InsideDefense.com*, November 27, 2013 and "Army Leaders Acknowledge Ground Combat Vehicle's Uncertain Future," *InsideDefense.com,* October 21, 2013.