

Ground Combat Vehicle: An Overview

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PERSPECTIVE

The Ground Combat Vehicle (GCV) was the United States Army's substitution program for shielded battling vehicles in Armored and Stryker detachment battle groups. The GCV was coordinated under the Follow on Incremental Capabilities Package of the BCT Modernization program. The principal variation of the vehicle was to be prototyped in 2015 and handled by 2017. It supplanted the dropped Future Combat Systems, monitored ground vehicles program. The Ground Combat Vehicle program was dropped in February 2014. Its substitution was Next age battle vehicle.

Design

Explicit plan components of the GCV were contracted out; however the Army planned the design and held in general liability regarding synchronization. This appeared differently in relation to the previous FCS monitored ground vehicles program where workers for hire had more command over the plan. Although the Army created the architecture and kept overall responsibility for synchronisation, specific design parts of the GCV were farmed out. This is in contrast to the previous FCS manned ground vehicles programme, when contractors had considerable design control. The GCV was supposed to be networked and have better survivability, all while using cutting-edge mobility and power management features. The military gave prospective companies access to sensitive information on the FCS Manned Ground Vehicles programme in order to use it in design proposals for the GCV. The GCV family was supposed to be based on a single chassis. The GCV was to be able to operate with the present battle command, control, and communications suite, but would eventually switch to the BCT Network, a state-of-the-art networked integration system. It would offer external gear, such as vehicles and electronics, with exportable electrical power and a battery charging capability from the BCT Soldier subsystems. The system would be able to work with unmanned systems as well as dismounted troops. The GCV had to be able to be transported by cargo plane, train, and ship. The Army required it to satisfy the current Stryker's availability rates. The Army did not impose any restrictions on the vehicle based on the dimensions of the C-130 Hercules, which had previously limited numerous designs. The more roomy C-17 Globemaster III would enable air mobility. The GCV was supposed to have good cross-country mobility, with a minimum off-road speed of 30 mph. The GCV should have had a better level of sustainability and

used less fuel than the Bradley or other vehicles of comparable weight and power. Both tracked and wheeled designs were accepted by the military. The GCV required up to \$200 per mile in operational maintenance, compared to \$168 per mile for the M2 Bradley. The Army wanted a commander's weapons station, an autocannon, a coaxial armament, and an anti-tank guided missile system aboard the vehicle. When the weapons suite was damaged, it had to be manually operated, and the commander's weapon station had to have a shield. On board, a detachable anti-armor weapon would also be carried.

The weapon suite would also stress modularity, be capable of defeating other IFVs, and provide non-lethal capability for use in civilian situations, according to the Army. The Army's Project Manager for Maneuver Ammunition System (PM MAS) began emphasising the importance of munitions suppliers starting to prepare for GCV IFV ammunition needs in May 2012. Solutions ranged in size from 25 to 50 millimeters, but 30 × 173 millimetres was deemed "the most likely" to meet lethality and stowed kill requirements. The Army intended the GCV to have the same level of passive blast protection as the MRAP and to use hit avoidance technology. The Army planned to equip the Ground Combat Vehicle with an active defence system.

Development

A high-level panel met in Washington, D.C. in June 2009 to review the Ground Combat Vehicle's needs. More than 100 defence firms attended two US Army-organized industry days in Michigan in October and November 2009 to indicate interest in bidding on the vehicle. In February 2010, a review was held and passed in Washington, D.C., which was required for continuing. On February 25, 2010, a request for proposals (RFP) was released, with companies having 60 days to respond, but this was extended by another 25 days. To "shave a little time off," a committee looked at the GCV schedule. The US Army wanted to spend \$934 million of the \$2.5 billion budgeted for BCT Modernization in fiscal year 2011 to build the GCV. By early October, up to three competitive contracts were expected to be awarded. By 2013, a decision on a prototype development contract would have been made. With the award of up to three vehicle contracts in the fourth quarter of Fiscal Year 2010, the Technology Development Phase (or Milestone A) would begin. Before full production could begin, an Engineering & Manufacturing Development (EMD) phase and a Low Rate Initial Production (LRIP) phase were to be completed. The pricey creation of a new combat vehicle was not considered as possible due to the draw-

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down of the Afghan War and budgetary constraints. In August 2011, Engineering and Manufacturing Development (EMD) phase contracts were awarded to BAE Systems and General Dynamics, respectively. Both contractors were supposed to complete the EMD phase in 48 months, but there were calls for only one of them to do so to save money. On January 17, 2013, the GCV purchase strategy was altered to reduce risk and keep the programme affordable. The adjustment

added six months to the technological development phase, giving the industry more time to fine-tune car designs. Milestone B would take place in 2014, when a single vendor would be chosen for the program's engineering and manufacturing development (EMD) and production stages. In preparation for vehicle manufacturing, this would kick off essential design and testing activities. Due to budget constraints, the number of vendors chosen was reduced from two to one.