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The Army's Mobile Protected Firepower (MPF) System

What Is the Mobile Protected Firepower (MPF) System?

The Army's MPF system is intended to address an operational shortfall:

Currently the Army's Infantry Brigade Combat Teams (IBCT) do not have a combat vehicle assigned that is capable of providing mobile, protected, direct, offensive fire capability.... The MPF solution is an integration of existing mature technologies and components that avoids development which would lengthen the program schedule.

Operationally, the Army wants the MPF to be able to

Neutralize enemy prepared positions and bunkers and defeat heavy machine guns and armored vehicle threats during offensive operations or when conducting defensive operations against attacking enemies.

In terms of the Army's overall procurement plans for MPF,

The Army Acquisition Objective (AAO) for MPF is 504 vehicles, with 14 MPFs per IBCT. The targeted fielding for the First Unit Equipped (FUE) is Fiscal Year (FY) 2025.

MPF Acquisition Strategy

In November 2017, the Army issued a Request for Proposal (RFP) for the Engineering and Manufacturing Development (EMD) phase and, in order to maximize competition, planned to award up to two Middle Tier Acquisition (MTA) contracts for the EMD phase in early FY2019.

Middle Tier Acquisition (MTA) according to the Defense Acquisition University, is a rapid acquisition approach that focuses on delivering capability in a period of 2 to 5 years. The authority to use MTA was granted by Congress in Section 804 of the FY2016 National Defense Authorization Act (NDAA) (P.L. 114-92). Programs using MTA are not subject to the Joint Capabilities Integration Development System (JCIDS) and provisions of DOD Directive 5000.01 "Defense Acquisition System." MTA consists of utilizing two acquisition pathways: (1) Rapid Prototyping, which is to streamline the testing and development of prototypes, and (2) Rapid Fielding, which is to upgrade existing systems with already proven technologies.

On December 17, 2018, the Army awarded two Section 804 Middle Tier Acquisition (MTA) Rapid Prototyping contracts for MPF. The two companies awarded contracts were General Dynamic Land Systems (GDLS), Inc. (Sterling Heights, MI) and BAE Systems Land and Armaments, LP (Sterling Heights, MI). Each MTA Rapid Prototyping contract was not to exceed \$376 million. The MTA Rapid Prototyping contracts required delivery of 12 pre-production vehicles (from each vendor) for developmental and operational testing, and a Soldier Vehicle Assessment (SVA).

Reportedly, BAE delivered its prototypes (**Figure 1**) to the Army in March 2021 after production difficulties and supplier issues related to COVID-19. Reportedly, GDLS was able to deliver all of its prototypes (**Figure 2**) in December 2020. The SVA reportedly began in January 2021 at Fort Bragg, NC—without the BAE prototypes—with testing scheduled to run through June 2021. During the assessment, soldiers are to assess MPF prototypes in a variety of operational scenarios. If subsequent operational testing proves successful, the Army plans to select a single vendor and transition into production near the end of FY2022.

Figure 1. BAE MPF Prototype



Source: <https://www.baesystems.com/en-us/article/bae-systems-awarded-development-contract-for-mobile-protected-firepower>, accessed June 14, 2021.

Figure 2. GDLS MPF Prototype

Source: <https://www.gdls.com/news/news-interior.html>, accessed June 14, 2021.

Government Accountability Office (GAO) Concerns

In its June 2021 report to congressional committees titled “Weapon Systems Annual Assessment,” GAO expressed the following MPF programmatic concerns:

MPF compressed its testing schedule due to delays to the start of testing of the contractors’ prototype designs. According to program officials, COVID-19 and integration challenges delayed the contractors’ prototype deliveries. While the program has a plan in place to mitigate these delivery delays, further delays to testing will increase the risk that the program’s planned completion date will not be achieved. Program officials stated that the program had planned for each of the two contractors to begin delivering 12 prototypes by the second quarter of FY2020, with warfighters assessing each contractor’s vehicles separately over the course of 3 months. However, contractor prototype deliveries did not start until the third quarter of FY2020, which delayed the start of testing to August 2020. The MPF contractors plan to deliver the remaining prototypes for testing as they are built and the Army expects these deliveries will continue throughout FY2021. (p. 155)

To accommodate the delays, the program plans to test the prototypes from each contractor as they are received, leveraging remaining time to complete as much testing as possible to support the contractor down-select and planned low-rate production decisions. Program officials told us the program plans to complete all tests within the original schedule. (p. 155)

GAO further notes

The MPF program plans to transition to the major capability acquisition pathway with entry at production in June 2022 with a single vendor. The Army’s goal is to equip the first MPF unit in FY2025. However, the program does not plan to meet our leading acquisition practices for acquiring knowledge prior to beginning production. For example, the program will not demonstrate critical processes on a pilot production line and plans to

enter production before manufacturing process are demonstrated to be stable, adequately controlled, and capable. This could increase risk that the program may not be able to meet its cost, schedule, and quality targets. (p. 155)

FY2022 MPF Budget Request

The Army’s FY2022 MPF Budget Request is for \$286.977 million in Procurement funding for 23 vehicles, with the Army noting that “MPF testing will be completed early 2nd quarter FY2022 and will inform both the selection of a vendor for Low Rate Initial Production (LRIP) and a 3rd quarter FY 2022 Milestone C decision.” (p. 15) GAO notes that as of January 2021, MPF has received \$852.36 million in total funding (in FY2021 dollars). (p. 153)

Potential Issues for Congress

Status of Ongoing and Future MPF Testing

Department of Defense Instruction 5000.80, “Test and Evaluation,” requires both MTA rapid prototyping and rapid fielding programs develop a test strategy. Programs under test and evaluation oversight are to submit this test strategy, including plans for operational testing and operational demonstrations, to the Director, Operational Testing & Evaluation (DOT&E) for approval. According to the Army’s FY2022 MPF Budget Request, plans call for the completion of MPF testing in early 2nd quarter FY2022. Furthermore, the Army notes that the ongoing SVA at Ft. Bragg, NC is an operational assessment rather than a formal test event designed to inform the development of MPF tactics, techniques and procedures (TTPs).

In this regard, CRS has not determined what formal DOT&E-approved testing has been accomplished and what testing remains before the Army’s planned 2nd quarter FY2022 deadline.

Is MPF Testing Being Compressed?

As previously noted, MPF testing was delayed until August 2020 and, as GAO reported,

To accommodate the delays, the program plans to test the prototypes from each contractor as they are received, leveraging remaining time **to complete as much testing as possible** [emphasis added by CRS] to support the contractor down-select and planned low-rate production decisions. Program officials told us the program plans to complete all tests within the original schedule. (p. 155)

As reported by GAO, this could suggest MPF operational testing is being compressed or modified to meet the Army’s schedule or perhaps to meet the MTA requirement of two to five years for capability delivery. Congress might decide to review MPF operational testing with the Army to clarify whether adequate operational testing—independent of Army-imposed production deadlines or MTA stipulations—is being conducted.

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