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The Army's Self-Propelled Howitzer Modernization (SPH-M) Program

Background

The Army's current self-propelled artillery system, the M-109 Paladin, first entered service in the 1960s and has been upgraded numerous times. The Army has two types of artillery: self-propelled, a howitzer mounted on a tracked or wheeled vehicle, or towed, a howitzer towed by a vehicle and then dismounted to fire. In 1994, the Army began to develop the Crusader, an advanced self-propelled 155-millimeter (mm) howitzer. The Crusader was canceled in May 2002 when then-Secretary of Defense Donald Rumsfeld stated that future enemy threats did not require the Crusader and the Department of Defense wanted instead to invest in other emergent technologies. The Army's second attempt to develop a new self-propelled artillery system, the Non-Line-of-Sight Cannon (NLOS-C), was to be developed as part of the Army's Future Combat System (FCS) program, which started in 1999 and was canceled in 2009 when then-Secretary of Defense Robert Gates restructured the program and canceled its associated vehicles. The third attempt for a new system was the Extended Range Cannon Artillery (ERCA) program (see **Figure 1**).

Figure 1. ERCA Prototype



Source: U.S. Army, "ERCA Autoloader is being tested for first time at YUMA Proving Ground," August 15, 2019.

The ERCA program started in 2018 and reportedly was intended to extend the range of artillery fire from 30 kilometers to 70 kilometers (43.5 miles). Reportedly, testing revealed excessive wear on the gun tube after firing a relatively low number of rounds. The Army discontinued the ERCA program in April 2024.

The Army's Self-Propelled Howitzer Modernization (SPH-M) Effort

The SPH-M effort was previously known as the Next Generation Howitzer (NGH) Program. The SPH-M Effort replaces the ERCA program and is the fourth attempt to develop a new self-propelled howitzer. In the aftermath of

the ERCA cancellation, the Army initiated a new conventional fires study in 2023 to determine the way ahead for artillery modernization. The study was completed in March 2024 and reportedly determined "the service should focus on more autonomous artillery systems with greater range and improved mobility."

SPH-M Requirements

According to Army FY2025 budget documents:

The Next-Generation Howitzer (NGH) will provide highly mobile, survivable, versatile, transportable, longer range fire support under a broad set of challenging operational conditions against current and emerging, small to large scale threats through 2040 and beyond. NGH reduces emplacement and displacement times, provides increased crew survivability and better cross-country mobility, adds overall effectiveness, and affords improved fire support capability for field artillery formations well beyond what towed howitzer systems can provide.

SPH-M Program Activities

The Army reportedly conducted a number of successful tests with the ERCA before cancelling the program; those past testing activities are to inform the SPH-M program. For example, in 2022, ERCA hit a target at 70 kilometers (43 miles) with an M-982 Excalibur extended-range guided artillery shell.

On August 28, 2024, the Army issued a request for information (RFI) to industry to

identify and preliminarily review the maturity of potentially offered self-propelled howitzer systems. The U.S. Government (USG) is interested in systems that have high maturity and minimize or eliminate development time. Additionally, the USG is interested in understanding the possible future modernization options for those systems. Any information received in response to this survey will be used by the USG to assess the viability of potential future acquisition strategies. When responding, the USG encourages industry to present both mature systems that are in service as well as systems that could be in service by 2026, absent any USG investment.

Army Awards SPH-M Demonstration Contracts

On October 14, 2024, the Army announced

the awarding of five contracts for the Army's upcoming Self-Propelled Howitzer Performance

Demonstration. The contracts were awarded to: American Rheinmetall Vehicles, BAE BOFORS, Hanwha Defense USA, General Dynamics Land Systems, and Elbit Systems USA. The contracts were awarded under Other Transaction Agreements (OTA) and the total award value for all contracts is approximately \$4 million ... The Army intends to complete all vendor performance demonstrations by the end of 2024 with the goal of determining if operationally suitable solutions exist to progress into a follow-on competitive evaluation that may lead to a future production contract.

Completion of SPH-M Demonstration

Reportedly, the Army planned to conclude its performance demonstrations “to assess five vendors’ mobile tactical cannon solutions by mid-December 2024,” with follow on efforts continuing in 2025. Army officials have reportedly noted that there is a “sense of urgency” involved with the overall SPH-M effort, suggesting that “potential adversaries now can outgun the Army when it comes to range. The goal is to extend current cannon ranges from around 30 kilometers to 50 to 70 kilometers by 2030.”

Army to Launch SPH-M Competition

Reportedly, the Army decided to launch a full and open competition with a planned “release of a Phase I request for proposal in mid-February [2025].” This decision suggests that the Army will not pursue an original design and choose from existing systems. Army program officials outlining program plans further elaborated that

- Phase I is intended to be “the ‘get to test’ phase which includes further testing of mature platforms, and it will not be a vendor downselect.”
- The Army then plans to select an unspecified number of companies to proceed and award Phase I contracts around the July to September (2025) timeframe. Those vendors are to participate in additional competitive evaluation testing running through FY2026.
- Army leaders plan to “evaluate competing systems on range, precision, and volume, as well as the platform characteristics like mobility and supportability.”
- Test data from Phase I is to be used to inform evaluation in Phase II. “If all goes as planned, that second round of downselects will occur in early fiscal year 2027 ahead of initial fielding in the 2030 timeframe—but possibly with multiple self-propelled howitzer lines of effort, as the Army reexamines its force structure.”

Change to SPH-M Competition

Reportedly, the Army now plans to conduct

another Yuma-based demonstration for January 2026. The Army plans to award each industry team roughly \$5 million to bring in artillery systems for a nine-month evaluation process before nailing down requirements and developing a strategy.

The demonstration will also serve as a way to look again at the Army’s overall plan for fires capability. According to several industry sources, a fires strategy was presented to the Army vice chief of staff in January, but he rejected it because it was limited to one solution and didn’t consider things like rockets. The vice sent the strategists back to the drawing board.

Regarding the planned January 2026 demonstration, it was suggested that

while some might argue the future demonstration is a repeat of the 2021 round, industry is seeing the effort as an opportunity to show more capability. It opens the aperture for systems to be demonstrated that might not have existed just a few years ago.

Congressional Activity

Some Members of Congress are concerned about the Army’s fourth attempt to develop a new self-propelled howitzer. S.Rept. 118-188 to accompany S. 4638, the National Defense Authorization Act for Fiscal Year 2025, notes, on page 29:

Though the Army cancelled its Extended Range Cannon Artillery (ERCA) program, a recently conducted tactical fires study validated the capability gap that the ERCA sought to fill. Observations from Ukraine reinforce the critical role of mobile cannon artillery. The extensive employment of unmanned aerial systems and near ubiquitous sensing only increase the risks to the Armored Brigade Combat Team (ABCT) and the Stryker Brigade Combat Team (SBCT) on the modern battlefield. The committee is interested in how the Army is seeking to rapidly identify and field improved cannon artillery to these formations. The committee supports Army efforts to achieve requirements by identifying currently available capabilities or rapidly improving our own systems. Accordingly, the committee directs the Secretary of the Army to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives, not later than March 31, 2025, on its long-range cannon modernization effort.

Potential Issue for Congress

SPH-M Program Way Ahead

Based on the outcome of the Army’s Long-Range Cannon Modernization briefing to the Senate and House Armed Service Committee, the Army’s planned January 2026 SPH-M demonstration could be modified, delayed, or cancelled. It is also possible that the Army’s overall long-range cannon modernization program could be modified and another fires capability study undertaken to determine the Army’s fire support requirements. Given these considerations, Congress could request the Army establish a modified SPH-M Program way ahead.

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The article also notes:

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