

Extended Range Guided Multiple Launch Rocket System/ Guided Multiple Launch Rocket System Alternative Warhead (ER GMLRS/GMLRS AW)



In October 2023, the Army executed three system qualification test (SQT) shots of the Extended Range Guided Multiple Launch Rocket System (ER GMLRS). The program continued to experience reliability failures with the new side-mounted proximity sensor (SMPS), predominantly on the ER GMLRS Alternative Warhead (AW) variant. The SMPS enables an optimal height of burst (HOB) for both the ER GMLRS AW and Unitary warhead variants.

In November 2023, the Army delayed additional testing of the ER GMLRS AW variant and ER GMLRS Unitary with height of burst mode, pending development of a redesigned SMPS. The Army Acquisition Executive also approved the transition of ER GMLRS from an engineering change proposal (ECP) to a subprogram under the GMLRS program and entry into Milestone C (MS C) in FY26. In February 2024, the Army conducted one mission of the planned ER GMLRS operational test with only the Unitary warhead variant in point detonate mode.

The Army plans to continue testing with three additional ER GMLRS SQT shots with the AW variant in 2QFY26 and complete operational testing with two multiple rocket missions with both ER GMLRS AW and Unitary variant rocket 4QFY26 to include the redesigned SMPS.

In August 2024, the Army decided ER GMLRS will enter a full-rate production (FRP) decision 1QFY27. Since ER GMLRS will be a subprogram under the GMLRS program and will start at MS C, DOT&E will write an ER GMLRS operational assessment to inform the FY26 MS C decision. Following integration and testing of the new ER GMLRS SMPS, DOT&E will publish an ER GMLRS IOT&E report that encompasses all production representative testing of ER GMLRS to inform the FRP decision in 1QFY27.

SYSTEM DESCRIPTION

The ER GMLRS is a GPS-guided, all-weather, day-night, surface-to-surface long-range precision rocket. It is designed to increase the maximum range from 70 kilometers out to 150 kilometers, enhance maneuverability, adjust the attack trajectory to vertical at select ranges, and incorporate an SMPS to enable an optimal HOB for both the ER GMLRS Unitary and AW rocket variants.

Both the ER GMLRS Unitary and AW variants have a 200-lb class high explosive warhead. The Unitary warhead produces blast fragmentation upon detonation and the AW accelerates two layers of preformed penetrators upon detonation. The ER GMLRS has multiple warhead detonation modes. The Unitary rocket is capable of HOB detonation at a commanded distance above the ground, point detonation upon target impact, and delay detonation after a commanded delay time following target impact has elapsed. The Army intends to employ the AW rocket in HOB detonation mode only.

MISSION

Army commanders will use the ER GMLRS rockets to engage point or area targets, including air defense, command posts, and high value targets, without the hazard of unexploded sub munitions.

PROGRAM

In June 2017, the Army initiated the ER GMLRS program as an ECP to the ER GMLRS AW and Unitary rockets. In August 2020, DOT&E approved the ER GMLRS TEMP Annex. The program experienced numerous delays caused by design issues, temporary facility shutdowns due to COVID-19, and production line issues.

Between October 2022 and November 2023, the program experienced reliability failures with the new SMPS during integrated testing, predominantly with the ER GMLRS AW variant. In November 2023, the Army delayed additional testing of the ER GMLRS AW variant, pending development of a redesigned SMPS. All testing was in accordance with the approved TEMP Annex.

In November 2023, the Army Acquisition Executive approved the transition of ER GMLRS from an ECP to a subprogram under the GMLRS program with entry at MS C in 3QFY25. In 1QFY25, the MS C decision shifted until the redesign of the SMPS and remaining integrated test shots are completed with the redesigned SMPS in FY26.

In January 2024, the Army approved initial fielding of the ER GMLRS Unitary variant in point detonate mode. In February 2024, the Army conducted one mission of the planned operational test with two ER GMLRS Unitary rockets in point detonate mode to support their ER GMLRS Unitary fielding decision. The ER GMLRS Unitary

height of burst and the AW variant was not part of the operational test due to the SMPS reliability failures.

Following integration of the redesigned SMPS into the ER GMLRS, the Army plans to conduct three additional SQT shots with the ER GMLRS AW variant rocket 2QFY26 and continue the operational testing with two multiple rocket missions with both ER GMLRS AW and Unitary variant rockets 4QFY26, with the redesigned SMPS. DOT&E will publish an IOT&E report that encompasses all production representative testing of the ER GMLRS to inform the FRP decision of 1QFY27.

» MAJOR CONTRACTOR

- Lockheed Martin Missiles and Fire Control – Grand Prairie, Texas (assembled in Camden, Arkansas)

TEST ADEQUACY

The testing of the ER GMLRS to date is incomplete to assess operational effectiveness, lethality, suitability, and survivability. The ER GMLRS TEMP Annex, approved by DOT&E in August 2020, includes a test program with 14 test rockets (with spares) and modeling and simulation considered adequate to evaluate the ER GMLRS operational effectiveness and lethality. The TEMP does not include firing of the ER GMLRS Unitary delay mode, because the flight termination system, required when firing in the Continental United States,

does not fit in the Unitary missile configuration. The Army does not plan to test ER GMLRS Unitary in delay mode before fielding it to units. The Army continues to refine testing for employment of different threat electronic warfare countermeasures. The Army should test without terrain masking during future electronic warfare test shots.

In February 2024, DOT&E approved the test plan for the first mission of the ER GMLRS operational and evaluation test in accordance with the DOT&E-approved TEMP Annex. DOT&E requested the Army provide updates on the program's acquisition strategy, planned modifications to the SMPS, and the timing of the material release and details for fielding Unitary and AW variants. DOT&E also recommended the Army update the ER GMLRS TEMP Annex and resubmit it for approval prior to a future MS C decision.

In February 2024, the Army conducted one mission of the planned ER GMLRS operational test with two Unitary rockets in point detonate mode at White Sands Missile Range, New Mexico. The Army conducted the first mission of the ER GMLRS operational test in accordance with the DOT&E-approved test plan, which was observed by DOT&E. The test consisted of new equipment training, a pilot test, and a flight test phase. During the pilot test, soldiers executed dry fire missions, reload operations, and survivability moves. During the flight test phase, soldiers executed a multiple rocket mission against a

threat representative target with ER GMLRS Unitary variant rockets in point detonate mode.

In FY26, DOT&E will publish an operational assessment report, based upon ER GMLRS testing to date with the old SMPS design and the redesigned SMPS, to support the Army's MS C decision FY26.

Following integration of the redesigned SMPS into the ER GMLRS, the Army plans to conduct three additional SQT shots with the ER GMLRS AW variant rocket and two multiple rocket missions with both ER GMLRS AW and Unitary variant rockets. The Army projects execution of the ER GMLRS SQT shots 2QFY26 and the remaining missions of the operational testing 4QFY26. DOT&E will publish an IOT&E report that encompasses all production representative testing of the ER GMLRS testing, to inform the FRP decision in 1QFY27.

PERFORMANCE

» EFFECTIVENESS

Insufficient data are available to evaluate the operational effectiveness of the ER GMLRS. During testing to date, the Army has demonstrated ER GMLRS is accurate and capable of exceeding the legacy objective range requirement of 70 kilometers.

The Army experienced increased mission processing times of ER GMLRS fire missions that could negatively impact the timely delivery of fires. The Army is investigating the cause and

potential solutions related to this issue.

» LETHALITY

Insufficient data are available to evaluate the lethality of the ER GMLRS against threat representative targets.

The ER GMLRS warhead lethality is dependent on HOB, angle of fall, and target location error. All lethality data collected to date with a HOB are from AW and Unitary rockets with the old SMPS that is undergoing redesign and replacement.

The Unitary rockets in point detonate mode had good effects against the threat representative target during the operational test event in February 2024.

» SUITABILITY

Insufficient data are available to evaluate the suitability of the ER GMLRS.

As of the testing to date, the ER GMLRS has not demonstrated its key performance parameter reliability requirement with statistical confidence. Additional flight tests may be required to demonstrate reliability depending upon the impact of the redesigned SMPS on the ER GMLRS production representative configuration.

» SURVIVABILITY

The Army conducted a cooperative vulnerability and penetration assessment in October 2023 and Phase 1 of an adversarial

assessment in January 2024. The Army used the findings from these two events to inform the Army's execution of Phase 2 of the adversarial assessment, concurrent with the limited operational test event in February 2024. DOT&E will publish a classified report on its findings prior to the Army's planned MS C decision in FY26

Additional cyber survivability testing may be required, depending upon the impact of the redesigned SMPS on the ER GMLRS production representative configuration.

for DOT&E assessment and reporting to inform the FRP decision.

RECOMMENDATIONS

The Army should:

1. Continue to provide the ER GMLRS T&E stakeholders with regular updates on the planned modifications to the SMPS.
2. Continue to coordinate for employment of different threat electronic warfare countermeasures without terrain masking during the remaining IOT&E shots.
3. Publish a revised ER GMLRS TEMP Annex for DOT&E approval.
4. Continue to develop a plan to demonstrate the key performance parameter reliability requirement with statistical confidence.
5. Consider testing ER GMLRS Unitary rockets in delay mode.
6. Due to changes in the acquisition schedule, the Army must allow adequate time