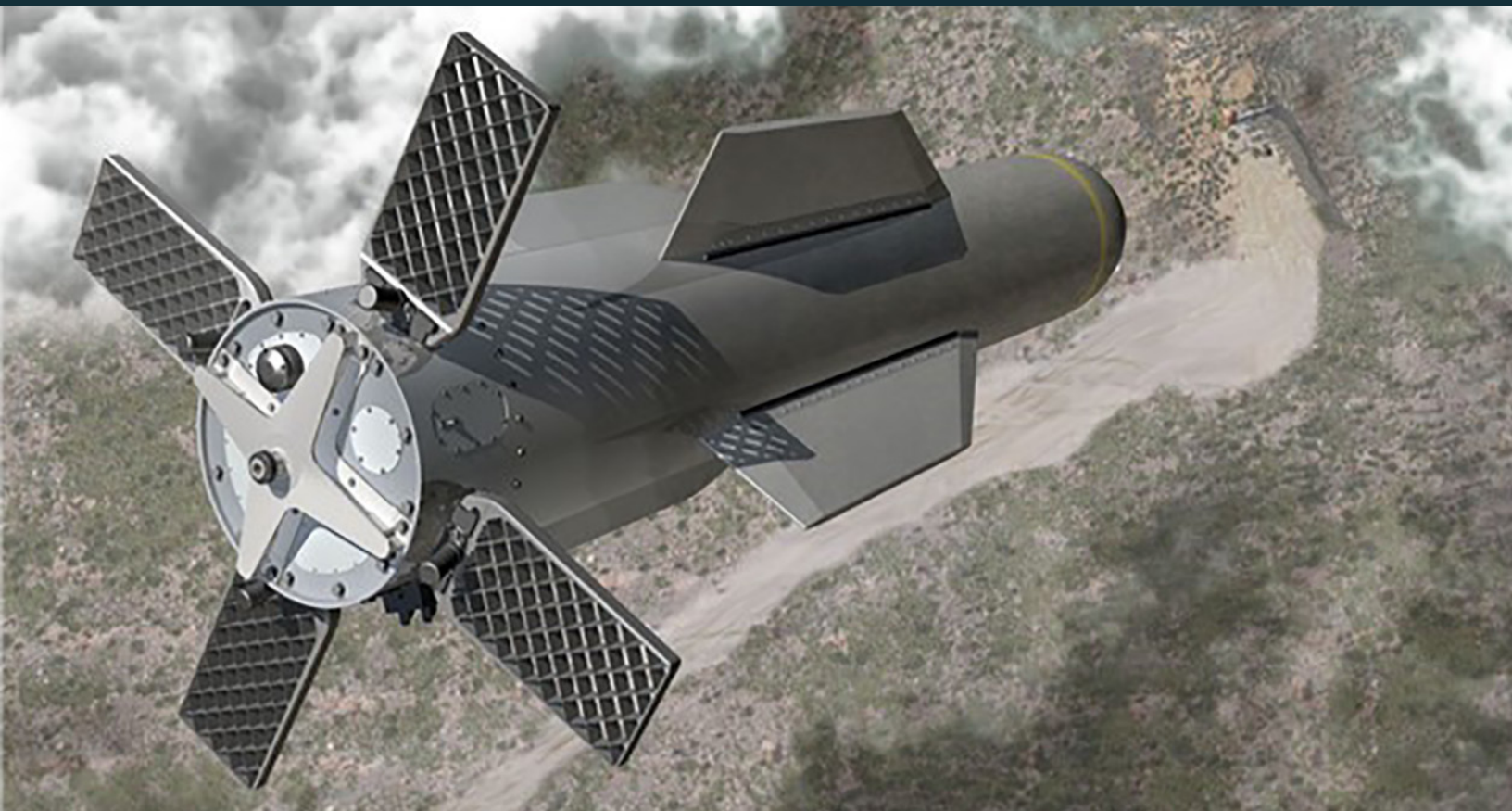


Massive Ordnance Penetrator (MOP) Modification



In FY22, the Air Force conducted three full-scale performance tests of the Large Penetrator Smart Fuze (LPSF) integrated into the Massive Ordnance Penetrator (MOP) and began subscale lethality testing. The Air Force has postponed fielding of the LPSF-enabled MOP from FY22 to at least FY25 due to delays in constructing the required target surrogates.

SYSTEM DESCRIPTION

The Guided Bomb Unit (GBU)-57 MOP is a large, GPS-guided, penetrating weapon designed

to attack hard and deeply buried targets (HDBTs) such as bunkers and tunnels. The GBU-57 warhead is intended to be more lethal than its predecessors, the GBU-28 and GBU-37. The LPSF integrates advanced smart fuze capability

into the MOP warhead, providing increased probability of kill against HDBTs by mitigating the risk of target intelligence uncertainty. The B-2 Spirit is the only aircraft in the Air Force inventory programmed to employ the MOP.

MISSION

Provide Combatant Commanders with a low-observable platform-deliverable, conventional HDBT defeat capability to achieve national security objectives.

PROGRAM

The MOP was developed from an Air Force-led, Quick Reaction Capability (QRC), SECDEF special interest effort. MOP transitioned to an Acquisition Category IC program in August 2017. The Air Force established the LPSF QRC program in August 2018 to respond to an Urgent Operational Need, validated in July 2018, to integrate and qualify a smart fuze capability into the MOP. This upgrade provides the capability to hold additional high-value HDBTs with limited threat intelligence at risk.

In FY21, the Air Force Program Executive Officer for Weapons pulled funds from the full-scale LPSF MOP testing due to contract award delays and significant Defense Threat Reduction Agency (DTRA) target construction overruns. In FY22, target

construction was further delayed by pandemic-induced supply and labor shortages, and the loss of scheduling priority status at the test range. Based on current funding options, the LPSF MOP fielding will begin in FY25 or later.

The next phase of the program intends to finalize smart fuze software, improve weaponizing tactics, and validate through demonstration lower-risk smart fuze capability against a full-scale, high-fidelity underground target.

» MAJOR CONTRACTOR

- The Boeing Company, Defense, Space & Security – St. Louis, Missouri

TEST ADEQUACY

In November 2021 and May 2022, the Air Force completed the second and third live weapon drops from B-2s to validate MOP performance. The events were in accordance with the DOT&E-approved Smart Fuzing Test Strategy and observed by DOT&E.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

DOT&E will provide a classified assessment of MOP effectiveness and suitability at the conclusion of the LPSF effort. The survivability assessment of MOP in a contested environment is classified.

RECOMMENDATIONS

The Air Force should:

1. Revalidate the Urgent Operational Need requirement for the LPSF QRC against legacy and pacing threats.
2. Complete the LPSF testing to validate the ability of MOP to meet Combatant Command requirements.

DTRA should:

1. Evaluate and expedite the contracting and test plan review processes to minimize delays to target construction and test execution.