

# B-52 Radar Modernization Program (RMP)



**Modification of B-52 Radar Modernization Program (RMP) test aircraft and development of initial system flight software began in FY23. Developmental and integrated flight testing is planned to begin in FY25 leading to IOT&E, full-rate production, and operational fielding in FY27.**

## SYSTEM DESCRIPTION

The B-52 RMP will replace the legacy APQ-166 radar with the modified APG-79 Bomber

Modernized Radar System. Replacement of the aging legacy radar is intended to increase system reliability and reduce sustainment costs. The Bomber Modernized Radar System will also provide new high-resolution

ground mapping capabilities to improve target location accuracy and capabilities to track moving surface and air targets.

## MISSION

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Theater Commanders use units equipped with the B-52 to conduct long-range, all-weather conventional and nuclear strike operations that employ a wide range of munitions against ground and maritime targets in low-to-medium adversary threat environments. B-52H theater mission tasks include strategic attack, time-sensitive targeting, air interdiction, close air support, suppression/destruction of enemy air defenses, maritime mining, and nuclear deterrence.

## PROGRAM

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The B-52 RMP is an Acquisition Category IB Major Defense Acquisition Program. DOT&E approved the B-52 RMP Test and Evaluation Master Plan (TEMP) in April 2021. In June 2021, the Air Force completed the Milestone B decision and awarded a five-year engineering and manufacturing development contract to Boeing. A two-part Milestone C decision is planned in 2QFY25 and 4QFY25 to modify 28 low-rate initial production aircraft. A full-rate production decision for the remaining 46 aircraft will follow IOT&E in FY27.

The program completed Critical Design Review in February 2022. The Air Force continues to refine the system design to address emerging aircraft integration issues. Modification of test aircraft and development of initial system flight software began in FY23. Developmental and integrated

flight testing is planned to begin in FY25 leading to IOT&E, full-rate production, and operational fielding in FY27.

Installation of the Tactical Data Link communication system upgrade necessary to complete RMP operational test requirements may not be available until just prior to IOT&E. Delayed integration of this related system upgrade increases the risk of late deficiency discovery.

The Air Force successfully leveraged DOT&E-sponsored funding to modernize B-52 test data collection and processing infrastructure. New B-52 data acquisition technologies have been successfully paired with a government-owned Knowledge Management (KM) system to implement cutting-edge data collection, management, and processing capabilities. Application of big data analytics has improved the quality, depth, and speed of post-mission data processing for current B-52 upgrade programs and hypersonic weapon testing. As the KM system continues to mature, it is expected to accelerate data analysis for all B-52 test programs.

DOT&E approved the B-52 Cybersecurity T&E Strategy in September 2023. This strategy defines a comprehensive, integrated cybersecurity test approach across all planned modernization programs, including Commercial Engine Replacement Program, RMP, and multiple communication system upgrade programs.

## » MAJOR CONTRACTORS

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- The Boeing Company – Oklahoma City, Oklahoma
- Raytheon, a subsidiary of RTX (formerly Raytheon Technologies) – Arlington, Virginia

## TEST ADEQUACY

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DOT&E approved the B-52 RMP TEMP in April 2021. The TEMP defines an adequate operational test strategy and necessary resources for integrated testing and IOT&E. The B-52 Cybersecurity T&E Strategy defines an adequate cybersecurity test approach across all modernization programs.

## PERFORMANCE

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### » EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

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Modification of two test aircraft and development of initial system flight software began in FY23. Developmental and integrated flight testing is scheduled to begin in 2QFY25. IOT&E will assess operational effectiveness, suitability, and survivability in FY27.

## RECOMMENDATIONS

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The Air Force should:

1. Continue to evaluate opportunities to accelerate Tactical Data Link integration on test aircraft to avoid late

deficiency discovery for this key supporting system.

2. Evaluate and implement system design changes necessary to manage simultaneous operation of radar and electronic warfare systems.
3. Evaluate system changes to optimize radar field-of-view in the air-to-air target mode.
4. Continue to mature and improve the B-52 KM system to accelerate the application of big data analytic techniques for B-52 modernization programs.