

INTERCONTINENTAL BALLISTIC MISSILE MODERNIZATION FACES CRITICAL RISKS AND OPPORTUNITIES

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Our prior work on the Sentinel program and the Air Force’s planning for the transition from Minuteman III to Sentinel revealed multiple challenges and opportunities.

Air Force’s Current and Future Intercontinental Ballistic Missile Systems



Minuteman III



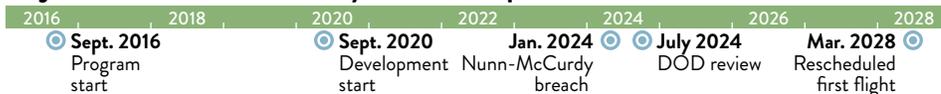
Sentinel

Source: Air Force. | GAO-26-108755

Our key findings on the Sentinel program include the following:

Opportunities during restructuring. As a result of the Nunn-McCurdy breach, the Under Secretary of Defense for Acquisition and Sustainment rescinded Sentinel’s Milestone B approval and related program baselines. Milestone B approval is a decision allowing major defense acquisition programs to enter into system development and demonstration prior to production and deployment. The Air Force is restructuring the program as it proceeds toward obtaining new Milestone B approval. The program’s first flight of the Sentinel missile has slipped about 4 years from original estimates and is now planned to occur in March 2028. However, the breach has provided the Air Force the opportunity to address fundamental issues with the program, including resolving issues with key design tools and performance requirements and finalizing the launch facility design. Future program outcomes will depend on the extent to which the Air Force takes advantage of this opportunity to correct earlier missteps.

Major Events in the Sentinel System Development



Source: GAO analysis of Department of Defense (DOD) information. | GAO-26-108755

Options to lower costs and arrest delays. Sentinel program officials continue to evaluate options to potentially redesign portions of the weapon system for cost reductions and are looking at avenues to minimize further schedule delays. For example, the Air Force is reevaluating system requirements and evaluating changes to the acquisition strategy—both of which could limit further cost and schedule growth.

Software risks. Sentinel is software-intensive, and development progress remains slower than anticipated. These delays have raised concerns from program officials about the prime contractor’s ability to complete the program’s software in a timely manner. Software risks remain because, notwithstanding how long the program has been in development, the Air Force and Sentinel contractor have yet to finalize software design or software development metrics, and are replanning the delivery schedule.

THE BIG PICTURE

The Air Force aims to replace the 50-year-old Minuteman III intercontinental ballistic missile (ICBM) system, part of the nation’s strategic nuclear deterrent, with the new and upgraded Sentinel system. But Sentinel is years behind schedule and proving far costlier than expected.

In 2024, the Air Force notified Congress that the Sentinel program had breached a statutory cost growth threshold—known as a Nunn-McCurdy unit cost breach—which triggered a statutorily required review process. The Nunn-McCurdy statute is a tool for Congress to use to hold the Defense Department (DOD) accountable for unit cost growth on major defense acquisition programs. The Air Force is restructuring the Sentinel program to try and improve affordability. The Air Force estimated that the program would cost at least \$141 billion, but the actual costs remain uncertain. Sentinel delays mean the Air Force will need to operate the aging Minuteman III longer than planned.

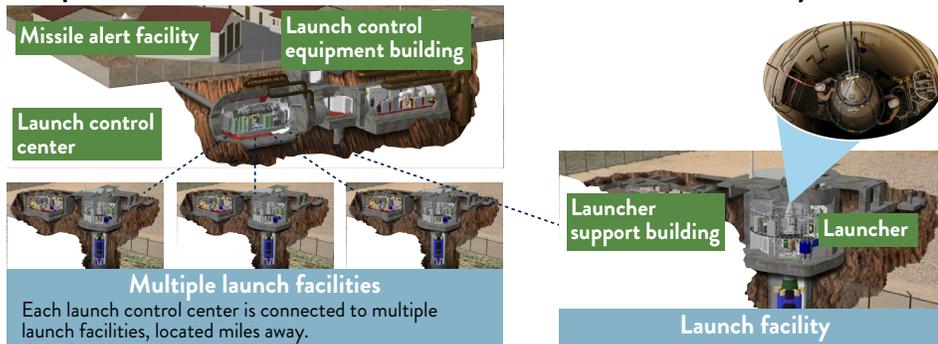
The Minuteman III system consists of more than 600 facilities across five states including missile silos and command bunkers, all of which must be replaced. Air Force leadership has described this megaproject as the most significant and complex infrastructure project in the service’s history. Sound planning will be essential for the Air Force to successfully manage a project of this scale while meeting round-the-clock nuclear deterrent requirements.

Benefits of the new system. Sentinel program officials expect that Sentinel will provide the nation with a significantly more capable ICBM system with modular capacity to adapt as threats and technology evolve. Further, officials stated that the Air Force and the Office of the Secretary of Defense are actively mitigating risks to ensure there are no capability gaps during the Minuteman III to Sentinel transition.

Our key findings from our [2025 report](#) on the Air Force’s planning for the transition to Sentinel while concurrently operating Minuteman III include the following:

Opportunity to improve risk management. The transition from Minuteman III to Sentinel involves a complex, total weapon system replacement. But the Air Force hasn’t developed a risk management plan for the most complex project the service has ever undertaken. A very large project that costs \$1 billion or more, affects 1 million or more people, and runs for years may be referred to as a megaproject. Megaprojects are extremely risky ventures, notoriously difficult to manage, and often fail to achieve their original objectives. Research has found that planners can better position a megaproject for success by investing appropriate time at the front end to develop the tools and processes to identify and manage risks.

Components of the Minuteman III Intercontinental Ballistic Missile System



Source: U.S. Air Force (information), U.S. Air Force photo by Airman 1st Class B. Williams (photo), and Northrop Grumman (images). | GAO-26-108755

Sustainment risks for Minuteman III. As a result of delays to Sentinel, the Air Force may need to operate Minuteman III through 2050, 14 years longer than planned. Prolonged operation of the aging system presents sustainment risks. Addressing these risks in a transition risk management plan would help ensure the system meets requirements during the transition.

Flight testing risks for Minuteman III. Sentinel delays also mean the Air Force will need to carefully manage the supply of parts for Minuteman III flight testing. The Minuteman III program conducts multiple flight tests per year to provide confidence in weapon system performance. The Air Force will need sufficient time to ensure the necessary parts are available for prolonged testing. A coordinated ICBM flight test plan would enable the Air Force to determine the quantity and type of parts the service needs to be able to test Minuteman III for another 2 decades.

Training for Air Force security forces. DOD will need to complete Sentinel launch facility test and evaluation activities early in the transition to inform DOD and Air Force security policy updates. Because security forces incorporate these updates into unit-level operating instructions, these policy updates will be needed to train Air Force security forces for the transition.

CHALLENGES AND OPPORTUNITIES

DOD and the Air Force are working to restructure the Sentinel program to ensure the program meets cost, schedule, and performance requirements. While working to obtain new Milestone B approval, the Air Force has the opportunity to correct program deficiencies that led to the 2024 Nunn-McCurdy unit costs breach, including by developing an integrated master schedule, maturing software development tools and processes, and finalizing the design of the Sentinel launch facility. The Air Force can also use the Sentinel program’s restructuring period to bolster its project management framework, as we recommended, to better position the service for a successful transition from Minuteman III to Sentinel.

Key recommendations from our 2025 report on the transition:

- ▶ The Air Force should develop a transition risk management plan, including a plan to address Minuteman III sustainment risks.
- ▶ The Air Force should expeditiously develop a post-2030 Minuteman III operational test launch plan that is aligned with a Sentinel fielding plan.
- ▶ The Air Force should develop a plan to complete the necessary Sentinel launch facility test and evaluation activities that will inform DOD security policy updates.

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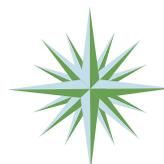
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Source: Air Force/Senior Airman M. Bowers (cover photo).



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