



The Sentinel ICBM: Too Big to Fail

Description

US : The Sentinel Intercontinental Ballistic Missile (ICBM) program is a Major Defense Acquisition Program (MDAP) that will replace the current inventory of 400 Minuteman III ICBMs.

This massive undertaking includes not only replacing the aging Minuteman III missile but also upgrading or replacing the associated infrastructure and command and control systems that support it.

Originally built with an expected life of around ten years, the Minuteman III is well into its fifth decade of service. The Air Force has essentially wrung out as much as it can from this venerable weapon system.

For decades, Minuteman III modernization has competed with other conventional programs and generally received just enough funding to keep the system alive and on alert.

Even with the modernization of propulsion, guidance, and communication systems over the years, the weapon system as a whole is no longer sustainable. Too many materials or components are aging out and nearly impossible to find or difficult and costly to re-engineer.

Thus, in 2015, the Air Force committed to replacing the Minuteman III and associated infrastructure as continued life extension of the system is not a viable solution both technically and financially.

However, the program faces some significant headwinds, as the current cost estimate has doubled in less than ten years.

Air Force Secretary Frank Kendall was frank in his assessment of the program when he stated the Sentinel is “struggling.” Recently, the Sentinel ICBM program notified Congress that the program shot past its original overall cost estimate of \$95 billion.

The notification, required by the Nunn-McCurdy Act, requires the Department of Defense to inform Congress if a program exceeds its projected cost and schedule.

The Sentinel is currently exceeding its per unit cost baseline estimate by 37 percent, meaning each missile will now cost an estimated \$162 million versus the original estimate of \$118 million.

This places the program in what is considered a “critical” status. Any program that falls into the “critical” category requires the Secretary of Defense and his department to review the program, determine that any new cost estimates are reasonable, that there are no other alternatives, and that it is a higher priority than other programs.

Ultimately, Secretary Lloyd Austin must certify that it is essential to national security and whether there is an alternative to the Sentinel ICBM.

When news of the Sentinel cost became public, many were quick to criticize the Air Force and the prime contractor, Northrup Grumman, for their collective ineptitude in accurately estimating all of the associated costs. Criticism such as this is usually warranted, albeit superficial, without looking at all the contributing factors.

While it is true that the Air Force and Northrup Grumman bear some responsibility for the far-too-low cost estimates, it's important to look at the sheer scope of the Sentinel program.

To put this in perspective, the Air Force has not undertaken an MDAP of this magnitude since the early 1960s when the Minuteman I, the first solid-fueled ICBM in the U.S. inventory, was deployed.

The Air Force took itself to task as Kristyn Jones, the Under Secretary of the Air Force, recently stated that some of the assumptions surrounding the original cost estimates of the Sentinel program were not “particularly valid,” with the caveat that the Air Force currently has more information that will aid in figuring out future estimates.

The Assistant Secretary of the Air Force for Acquisition, Andrew Hunter, agreed with the flawed cost estimates during a recent interview where he said, “It’s been over 70 years since we did the ground piece of this. We didn’t estimate it well.”

Some critics reported that “Incomplete data, rosy cost projections, and excessive secrecy appear to have combined to push the Sentinel program deep into the red.”

These assertions can partially be explained by the fact that the initial cost estimate was made in 2015.

There have been a number of factors contributing to rising costs since then: rising real estate prices, a global pandemic, inflation, and supply chain issues, to name a few.

It’s also important to look at the enormity of the task at hand. Kendall referred to the Sentinel as the “biggest thing” the Air Force has ever undertaken because of the various components of the entire program.

The program plans to produce over 600 new missiles, upgrade or construct hundreds of facilities, and lay nearly 8,000 miles of new, underground fiber optic cabling for command and control.

This massive enterprise spans 40,000 square miles and involves six states. Assumptions were made during early cost estimates that some of the facilities currently in use could be refurbished and reused

to save money and time, which has compounded the cost overruns.

However, recent surveys of the existing facilities revealed that some could not and must be replaced entirely. Not unsurprisingly, the Air Force has reported the vast majority of the rising costs are not due to missile development but real estate issues—such as acquiring land, negotiating access with hundreds of landowners, and construction costs associated with the new facilities and underground cabling.

Additionally, a program of this scope also involves a large environmental assessment effort, which involves numerous public hearings and negotiations with Native American tribes, state and federal agencies, and landowners.

So yes, claims of “incomplete data” are accurate but should be considered in the context of what was known by both the Air Force and the contractor at the time of the original estimate and the unknowns that have emerged since then.

There is some good news, however. To date, Sentinel missile development is progressing with recent successful tests of the first two solid rocket motor stages as well as successful upper-stage tests.

While the Sentinel missile itself has experienced some cost growth, an Air Force official stated it probably would not have caused a Nunn-McCurdy breach on its own.

The rising cost of the Sentinel has reignited the debate on the need for ICBMs in the nuclear force structure. This line of thinking is misguided as the strategic attributes of ICBMs are irrefutable, providing the most responsive capability while also providing a targeting conundrum for our adversaries by having to take into account 400 individual targets dispersed widely across the heartland of the United States.

As our adversaries continue to produce and modernize their respective nuclear forces, now is not the time to shortchange the importance of a land-based nuclear capability.

The Sentinel will provide precisely that: a highly effective, modern ICBM force ready to ensure a decisive response to any nuclear threat—the essence of deterrence.

Cost increases and some schedule slips surrounding the Sentinel are unfortunate but should be expected, especially on a program of this magnitude.

However, the program will undoubtedly proceed as nuclear deterrence is a top priority mission of the Department of Defense, and ICBMs have always been and will remain a critical leg of the nuclear triad.

Historically, the ICBM force has benefitted from bipartisan congressional support across multiple administrations.

Additionally, the current National Defense Authorization Act calls for no less than 400 ICBMs. Future discussions can and should be had on how many ICBMs are enough, but that number is certainly not zero.

Secretary Austin and his staff have an important decision to make, and it's a sure bet he will support the continuation of the Sentinel program and ensure it receives the funding and oversight required to

sustain a viable triad. There simply is no other choice.

by Dana Struckman

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