

WORKING P A P E R

Comparing the Cost of Penetrating Bombers to Expendable Missiles over Thirty Years

An Initial Look

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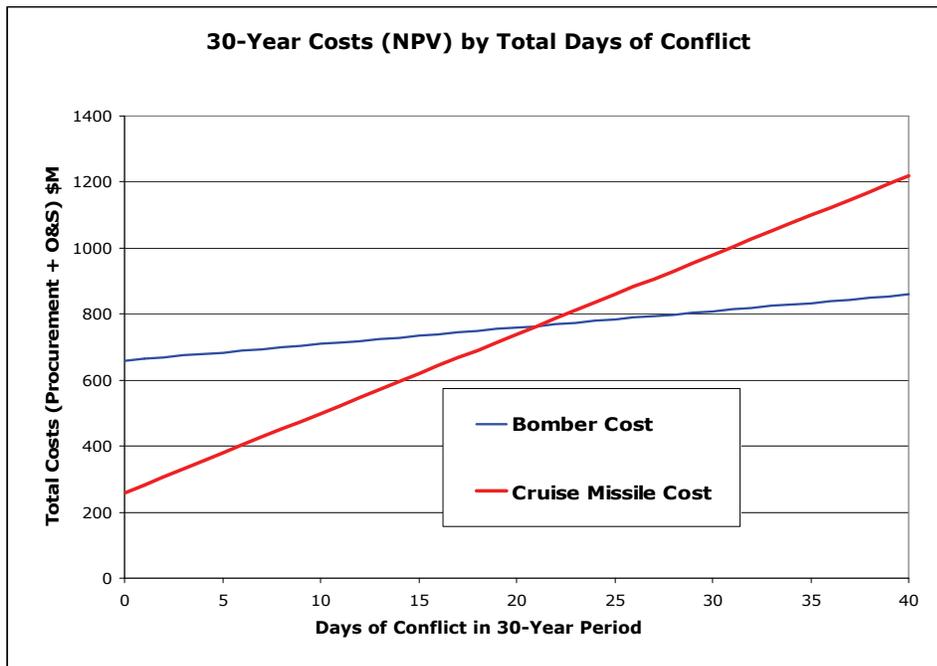


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Comparisons between penetrating bombers and expendable missiles have long been an issue of debate. Within this debate, the question arises: Which approach is more affordable?

Project AIR FORCE (PAF) developed preliminary life cycle costs estimates (procurement + O&S) for a new penetrating bomber, including the cost per day of fighting one or more conflicts against adversaries that possess even moderate air defenses. PAF also developed preliminary cost estimates for cruise missiles (notionally a new long-range cruise missile design) launched from standoff distances by non-stealthy platforms. PAF did not include the procurement costs for the cruise missile launch platforms. PAF also assumed that cruise missiles do not require more ISR support than bombers. Both of these factors bias the cost analysis in favor of missiles. (Detailed combat effectiveness analysis was not included in this preliminary assessment.)

PAF's calculations show that if the nation fights under these conditions for 20 days or more over the next 30 years, penetrating stealth bombers cost less than expendable missiles for similar missions.



In this figure, the blue plot shows one penetrating bomber's total life-cycle cost (net present value (NPV) costs, thirty-year life) as a function of the number of days it engages in combat, with one sortie per day.

The red plot shows the costs of achieving the same result with 12 cruise missiles per day launched from standoff distances.

In addition to the generally unfavorable cost comparison, relying on expendable missile options may also involve additional risks. If the U.S. has a limited stockpile of missiles, we may not have good options to continue a particular conflict once those stocks have been depleted. Furthermore, potential adversaries may make calculations based on the size of the U.S. missile inventory. This may reduce our ability to deter war; and if we do engage, it could provide adversaries with an incentive to ride out our attacks.