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A/F-117X Aircraft Proposal: Background and Issues for Congress

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SUMMARY

This report provides background information on Lockheed Martin Corporation's proposal to build up to 255 A/F-117X medium-attack aircraft, as a near-term way of introducing stealth technology into the Navy's carrier air wings. The Navy does not support the proposal. In FY 1996, Congress authorized, but did not appropriate, \$25 million to commence a 6-month program definition phase. The Secretary of Defense was directed to submit a report evaluating this proposal against the requirements of the Joint Advanced Strike Technology/Joint Strike Fighter (JAST/JSF) Program. As of this date, no official report has been made.

THE PROPOSAL

In 1995, Lockheed Martin proposed to build up to 255 A/F-117X medium-attack aircraft for the Navy at an average unit "fly away cost"¹ of \$59.4 million, in 1995 dollars. If the Air Force purchased an additional 120 aircraft for its own use, then the average cost of the Navy version would drop to \$56 million per plane. Lockheed Martin estimates the Navy's total engineering, manufacturing, and design (EMD) costs would range from \$3.4 billion to \$5 billion. Lockheed Martin would require one year for the A/F-117X to complete the program definition phase, with the earliest IOC (initial operational capability) date to be FY2004, or seven years after securing approval to begin.

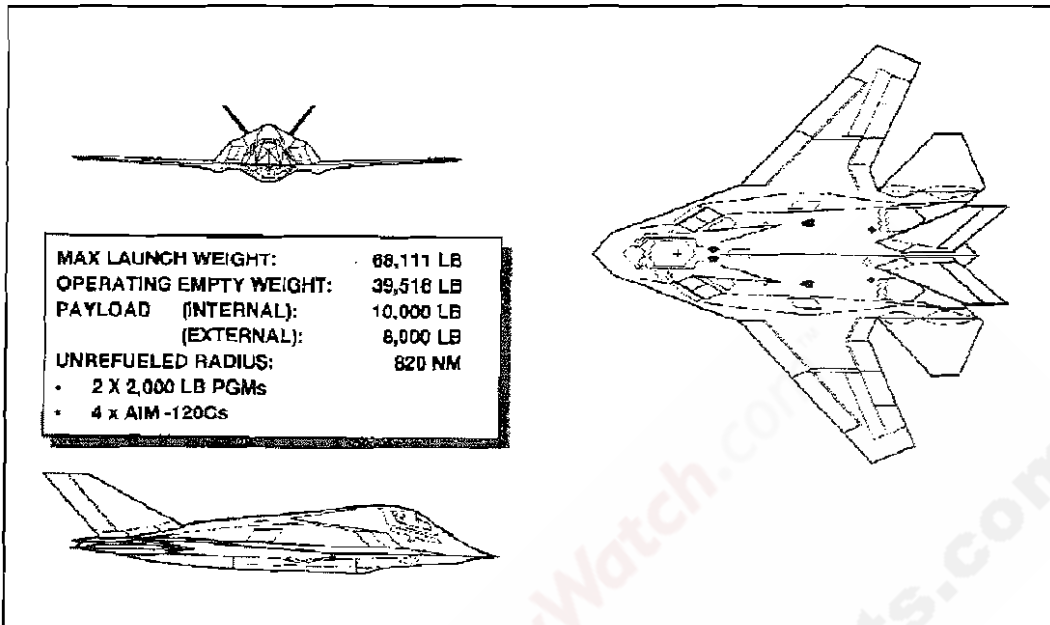
DESCRIPTION OF THE A/F-117X

The A/F-117X would be a modified version of the Air Force F-117A Nighthawk, a stealth aircraft that was highly effective in the Persian Gulf war. The A/F-117X would have many new and advanced technologies necessary for the aircraft to operate from an aircraft carrier, e.g. folded wings, larger landing

¹ Unit flyaway cost is the basic cost of a single airplane, and includes the airframe, engine, avionics and nonrecurring costs (but excludes research, development, training and evaluation and military construction).



gear, a lower radar cross section, and redesigned tailhook and tail to improve ease of maneuverability.



A/F-117X Configuration Update (Config. 3720)

Source: Lockheed Martin

HISTORY OF THE A/F-117X

For many years, the Navy has expressed a desire to integrate stealth technology into its carrier-based air wings, and has sought to build an affordable and survivable aircraft to replace the A-6E Intruder medium attack plane. The A-6E entered service on Feb. 1, 1963; the last A-6E squadron will leave service in FY1997.²

Two earlier attempts to develop and procure a successor aircraft were later terminated. The A-12 Avenger, a carrier capable stealth aircraft intended to have better operational range and payload than the A-6E, was canceled in 1991 by then Secretary of Defense Dick Cheney primarily due to development problems and cost overruns. As its replacement, the Navy proposed an aircraft called the A/X (later the A/FX). Lockheed offered a proposal for a Navy variant of the Air Force F-117 aircraft, later rejected by the Navy. Lockheed modified the F-117N and changed the name of the proposed aircraft to the A/F-117X.

In 1993, largely as a result of the Clinton Administration's Bottom Up Review, the A/FX was canceled and the Air Force and Navy were directed to develop a joint program called JAST (now JSF) instead.³ In the beginning,

² For further discussion on the accelerated retirement of the A-6 Intruder, see CRS Report 93-868 F, *Navy Carrier-Based Fighter and Attack Aircraft: Modernization Options for Congress*, by Ronald O'Rourke (October 1, 1993), p. 13-14. The retirement status of the A-6E Intruder was provided by the Navy Office of Legislative Affairs, Joint Strike/Aviation Programs, Wash., D.C.

³ Sweetman, Bill. The Next JET Fighter. *Popular Science*, June 1996:80-85.

Congress did not fully support the JAST/JSF Program, which many dismissed as "an engineer's sandbox."⁴ The JAST/JSF Program has gained considerable support, however, as a program more focused on the creation of prototype aircraft.

The A/F-117X proposal was initially viewed by some in the Navy as a near-term solution should the JAST/JSF Program fail to produce an acceptable aircraft; however, Navy officials withdrew their support when it became clear that funding for the A/F-117X proposal would have to come at the expense of the JAST/JSF Program or the Navy's F/A-18E/F Super Hornet Strike-Fighter Program.

The proposal found support among some Members of Congress, who were concerned over the near-term absence of a stealth aircraft within the Navy; this led to the authorization of funds by the 1995 Senate Armed Services Committee (SASC) to begin the program definition phase of the A/F-117X proposal. These funds would be diverted from the JAST/JSF Program.

To date, Congress has taken no action on the fate of the A/F-117X Proposal. Three issues are critical to the decision Congress will make: 1) what is the technical effectiveness of the proposal, given the availability of other aircraft in the near-term; 2) how does the decision affect Navy's mission effectiveness, and 3) given the prediction that the Joint Strike Fighter may not be available until FY2010, or later, what effect does the Navy's lack of a stealth aircraft have on its potential threat response?

OPTIONS FOR CONGRESS

Congress has three options to consider: 1) Provide funding for the 6-month program definition phase as well as the research, development, training and evaluation (RDT&E) phase and procurement of the A/F-117X aircraft, 2) Cancel all funding, or 3) Provide intermediate funding for RDT&E, preserving the option of eventually procuring some number of A/F-117X aircraft.

KEY ISSUES

The Navy and Lockheed Martin Corporation hold divergent views on the merits of the A/F-117X proposal as it relates to mission effectiveness, technical effectiveness, and costs.

⁴ Sweetman, Bill. The Next JET Fighter. *Popular Science*, June 1996:81.

Mission Effectiveness

Between now and the advent of JSF, the Navy is depending on a combination of factors to meet its mission requirement of a first-day, survivable strike airplane. First, Navy officials interviewed for this report do not believe that the near-term threat warrants an F117-variant airplane, choosing to depend on the F/A-18C and Tomahawk cruise missiles as effective in the near term; moreover, the affordability and survivability of the F/A-18E/F will make it an effective choice when it reaches IOC in FY2001.

Second, the Navy is experiencing a paradigm shift in the view that mission requirements can no longer afford the luxury of single mission airplanes. With the availability of the F/A-18C/D and E/F models, Navy officials see no need for a direct replacement of the A-6E. The JAST/JSF aircraft and the F/A-18E/F are more compatible, with similar state-of-the art avionics packages, while the A/F-117X comes with an Air Force avionics package.

In Lockheed Martin's opinion, a JAST/JSF aircraft would duplicate the F/A-18E/F in both mission and performance. Although the A/F-117X is focused on the deep strike mission, it is not viewed by Lockheed Martin as a single mission airplane. A number of multi-mission capabilities have been integrated into the design such as air-to-air capability, anti-ship, mine laying, air defense and reconnaissance. Lockheed Martin views the A/F-117X as having the same engine as the F/A-18E/F, sharing some commonality with its APG-73 radar, avionics, displays, aircraft generators, and communication and navigation equipment.⁵

From the beginning, Lockheed Martin's expressed intent was to meet the A-12 requirement and the best interest of the Navy in the near-term. It projected a shortfall in long-range, first-day survivable, attack aircraft and offered the A/F-117X proposal as a potential replacement for several aging aircraft. Lockheed Martin is concerned that the Navy is deviating from a mission requirement to have a first-day survivable strike aircraft to replace the A-6E Intruder and F-14 Tomcat. The successful performance of the F-117 Nighthawk during the Persian Gulf war has led many to conclude that, in a modern war, the absence of stealth would pose a significant handicap. Without stealth, Lockheed Martin believes that the Navy must either rely on very large force structures similar to those employed since Vietnam, or leave many of the ground target requirements to the Air Force.

Technical Effectiveness

Lockheed Martin states that the core technology rooted in the A/F-117X is either in existence, is being developed on other defense programs, or is sponsored by current service budgets. According to Lockheed Martin, technical evaluations performed by Naval Air Systems Command (NAVAIR) staff have

⁵ Technical information on the A/F-117X proposal was supplied by Paul K. Meyer, Manager, F-117 Advanced Programs, Lockheed Martin Skunk Works, Palmdale, CA. Permission was granted for use in this report.

concluded that there are no "technical showstoppers"⁶ that affect the design of the A/F-117X and that the latest developments in design, material, propulsion, sensors, and avionics have been incorporated into the aircraft. Thus, Lockheed Martin states that engineering, manufacturing and development costs are low and any associated risks are minimal.

Navy officials do not refute the technical effectiveness of the A/F-117X but view it as technically incompatible with other Navy airplanes. The JAST/JSF aircraft and the F/A-18E/F will serve as the backbone of the Navy's strike program. The Navy, Air Force and Marine Corps are working together on the JAST/JSF aircraft design. Since the Navy no longer seeks to replace aircraft on a one-to-one basis, it does not see a need for a direct replacement for the A-6E Intruder, seeking instead to acquire technology that is compatible with both the mission requirement and other Navy aircraft.

Costs

The Navy has stated its opposition to both the development and the procurement of the A/F-117X because (1) the projected unit fly away cost of the A/F-117X is twice that of the F/A-18E/F, making it a less affordable aircraft, and (2) the A/F-117X competes directly for JAST/JSF dollars, as its funding would be drawn from the JAST/JSF Program or other naval projects. Current projections place the IOC for the JAST/JSF aircraft in the FY2008-2010 range, while the IOC for the A/F-117X is FY2004. The Navy's position is that the A/F-117X is not simply unaffordable, but would be considerably more costly an investment in light of the financial resources devoted to JAST/JSF; it is not worth the money given a window of two to six years during which the near-term threat does not warrant a new aircraft. The Navy believes that it will reap economies of scale in the purchase of the JAST/JSF because over 3,000 airplanes are now projected to be procured by the Navy, Air Force, and Marine Corps, with these services sharing in development costs.

Lockheed Martin was aware of such considerations that led the Navy to withdraw its support of the A/F-117X. The Navy withdrew its support because of a lack of funding, and a need to procure the F/A-18E/F. However, Lockheed Martin argues that the Navy is still faced with the lack of a replacement for the A-6E Intruder and the F-14 Tomcat, while relying on two few F/A-18E/F airframes to staff the current carrier decks.

Lockheed Martin is also aware of the Navy's concern about finding enough funds to procure the F/A 18-E/F, JAST/JSF aircraft and the A/F-117X, and offers a variety of procurement plans, ranging from funding as few as 8 and as many as 24 aircraft per year. These plans are made affordable by proposing tradeoffs in future procurement of F/A-18C/D, F/A-18E/F and JAST/JSF aircraft.

⁶ White paper, Lockheed Martin Skunk Works, Palmdale, CA, April 29, 1996, p. 2.

CONGRESSIONAL ACTION

In 1995 Congress attempted to play a direct role in funding a successor for the A-6E Intruder. The National Defense Authorization Act for 1996 allocated \$200,156,000 for the JAST/JSF program; \$25 million of which would be available "for the conduct, during fiscal year 1996, of a 6-month program definition phase for the A/F-117X, an F-117 fighter aircraft modified for use by the Navy as a long-range, medium attack aircraft . . ."⁷

This legislation also directed the Secretary of Defense to submit to the congressional defense committees a report outlining the requirements that exist for the JAST/JSF program that cannot be met by existing aircraft or those in development. The report was due by March 1, 1996, later amended to May 1, 1996. As of this date, the report has not been delivered to Congress. The 1996 Appropriations bill contained no funding for the A/F-117X proposal, but the \$25 million exists within the JAST/JSF program, to be directed by the Office of the Secretary of Defense (OSD) in consultation with the Navy. OSD would then report to the Congress as required by the Act.

If a decision is to proceed with the A/F-117X program definition phase, the funds for development have been authorized through the JAST/JSF Program, but the development and procurement costs would have to be provided by Congress or taken out of existing programs. Congress would need to examine the effect of diverting monies from the JAST/JSF or F/A-18E/F on the future force structure of the Navy, as well as what role affordability and survivability might play in naval mission requirements.

Neither the 1997 DOD Defense Authorization Bills (H. Rept. 104-563 and S. Rept. 104-267) nor the Appropriations Bills (H. Rept. 104-617 and S. Rept. 104-286) make any reference to the A/F-117X Proposal.

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⁷ H. Rept. 104-450, p. 36.