

GAO

Briefing Report to the Chairman,
Committee on Armed Services
House of Representatives

July 1986

AIRCRAFT PROCUREMENT

Air Force Air Defense Fighter Competition



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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-223549

July 22, 1986

The Honorable Les Aspin
Chairman, Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

In response to your June 6, 1986, request, we are making this report on the Air Force's planned competitive acquisition of 270 fighter aircraft for the strategic air defense forces. The Congress directed the fighter competition following submission of unsolicited proposals by Northrop Corporation offering the F-20 and General Dynamics Corporation offering the F-16(SC) at substantially lower prices than models currently being purchased.

We found that, prior to the competition, the Air Force had not identified a requirement for new air defense aircraft and that the planned acquisition of 270 aircraft is in addition to planned increases in aircraft procurements. This will increase Air Force fighter aircraft funding requirements by about \$4 billion.

The Air Force, as stated in its tactical fighter modernization and expansion plan, also known as the "tactical fighter roadmap," is expanding its tactical air forces (TAF) fighter fleet from 36 to 40 wings. The Air Force originally planned to procure about 276 aircraft per year to replace older aircraft and to increase TAF from 36 to 40 wings, a net increase of about 400 aircraft. Under this plan some F-16A aircraft would be transferred from TAF to the strategic air defense forces. Such transfer of less capable aircraft has traditionally been made because the air defense mission is generally regarded as less demanding than TAF missions. Air defense aircraft are not required to counter enemy ground threats or high performance fighter aircraft to carry out its mission.

The fiscal year 1986 Appropriations Committees' conference report directed a competition for new fighter aircraft. To comply with this mandate while recognizing that the F-16SC and F-20 aircraft have limitations for TAF missions, the Air Force stated that it would use the 270 aircraft for its less demanding strategic air defense mission rather than rotate F-16As to the strategic air defense forces. Subsequently, the Congress passed the DOD Appropriations Act, 1986, requiring the Air

Force to fill its air defense aircraft need through competition. The winning aircraft will replace F-106 and F-4 aircraft assigned to the 11 Air National Guard squadrons of the strategic air defense forces. Source selection for these new aircraft is expected in November 1986 with procurement beginning in fiscal year 1987.

We believe spending about \$4 billion to upgrade air defense forces with new F-16SC or F-20 aircraft will not substantially improve air defense capability compared to the Air Force standard practice of rotating older aircraft from the TAF to this role. That practice allows for the continued use of aging but sufficiently capable aircraft for the less demanding air defense role. Since the F-16A, equipped with a beyond visual range missile, offers about the same air defense capability as the F-16SC or F-20, we believe that the normal Air Force practice of modernizing air defense forces with these older TAF aircraft would achieve essentially the same result as acquisition of 270 new aircraft for \$4 billion.

A study by the North Dakota Air National Guard contends that the current inventory of F-4Ds, with some modifications, could provide more air defense capability at less cost than buying the 270 new aircraft.

The result of simultaneously modernizing both TAF and the strategic air defense forces is that beginning in fiscal year 1988, the Air Force plans to procure 48 more new aircraft per year through fiscal year 1992 than originally planned. In appendix I, we discuss issues regarding the procurement of 270 new strategic air defense fighters and its relationship to TAF modernization and expansion goals. Appendix II shows annual aircraft procurement goals before and after the fighter competition.

To determine the status of these procurement programs, we met with and obtained data from Air Force officials at Headquarters, U.S. Air Force, Washington, D.C.; Tactical Air Command Headquarters, Langley Air Force Base, Virginia; Air Force Operational Test and Evaluation Center, Kirtland Air Force Base, New Mexico; and Aeronautical Systems Division, Wright-Patterson Air Force Base, Ohio. We also visited and obtained information from the aircraft contractors involved in the competition-- General Dynamics at Fort Worth, Texas, and Northrop at Hawthorne, California. We conducted our work from July 1985 through June 1986 in accordance with generally accepted government auditing standards.

As agreed with your office, we did not request official agency comments on this report. However, the views of Air Force and Air National Guard officials were obtained and incorporated where appropriate. We plan no further distribution of the report until 30 days after its issuance date, unless you release its contents earlier. At that time, we will send copies to the Chairmen, Senate Committee on Armed Services, and House and Senate Committees on Appropriations; the Secretaries of

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Defense and the Air Force; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,

A handwritten signature in cursive script that reads "Frank C. Conahan". The signature is written in dark ink and is positioned above the typed name and title.

Frank C. Conahan
Director

ISSUES REGARDING PROCUREMENT OF270 NEW STRATEGIC AIR DEFENSE FIGHTERS

In April 1985 Northrop submitted an unsolicited proposal to the Air Force to provide 396 F-20 aircraft for a unit procurement cost of \$12.8 million each in 1985 dollars. This triggered a General Dynamics offer of a specially configured F-16 (the F-16SC) for \$10.9 million each in 1985 dollars--about \$4.7 million less than the \$15.6 million F-16C currently being purchased by the Air Force. In response to the apparent opportunity to buy tactical aircraft at reduced costs, the Congress directed the Air Force to conduct a fighter competition.

The F-20 and F-16SC prices are lower than the F-16C primarily because they have less combat capability. The F-20, which was intended for the foreign military sales market, was specifically developed to be a less capable, easier to maintain aircraft than U.S. front-line fighters. The F-16SC is basically an F-16C with some equipment deleted or replaced by less expensive, less capable systems. Because the proposed F-20 and F-16SC are less capable than the Air Force wants for its TAF missions, it has directed the competition toward the less demanding strategic air defense role.

Although the air defense competition was open to all suitable candidate aircraft, the F-16SC and F-20 were the only contenders entering source selection. Source selection is expected by November 1986 with procurement beginning in fiscal year 1987.

THE F-20 AND F-16SC NOT IDEAL
FOR AIR DEFENSE MISSION

The air defense fighter's primary requirements are to maintain peacetime air sovereignty and to defend the United States against enemy bomber and cruise missile attacks in wartime. Although the strategic air defense mission is, in many respects, less demanding than TAF counterair, close air support, and interdiction missions, neither the F-20 nor the F-16SC is particularly well suited for air defense because of radar and weaponry limitations. However, Air Force officials state that either will meet minimum air defense requirements and that based on the performance requirements contained in the fighter competition request for proposal, the winning aircraft may have more capabilities than contained in either of the unsolicited proposals.

The strategic air defense fighter ideally should have a long range and loiter capability, advanced radar, and a beyond

visual range radar missile.¹ Until the Advanced Medium Range Air-to-Air Missile becomes available or until the F-20 and F-16SC aircraft are made capable of carrying Sparrow missiles (at an estimated cost of about \$500,000 per aircraft), neither aircraft will have any radar missile capability to destroy enemy bombers or cruise missiles. Each aircraft would have to come within very close range to employ infrared missiles or guns. Adding the large Sparrow missile would, however, reduce both aircrafts' range. In addition, the F-16SC and F-20 radars cannot attain significantly greater detection ranges without airframe changes to accommodate larger antenna sizes.

Study contends modified F-4Ds could meet air defense requirements

On May 22, 1986, in testimony before the Senate Committee on Appropriations, Subcommittee on Defense, the Adjutant General of the North Dakota Air National Guard stated that F-20 and F-16SC aircraft would be unsatisfactory for air defense requirements. He stated that a modernized F-4D, containing F-15 radar, some additional avionics upgrades, and infrared search and track system would make a superb air defense aircraft and would save about \$4 billion over new aircraft procurement (based on an estimated cost of \$4.5 billion for the new aircraft). A supporting study prepared by the North Dakota Air National Guard estimated the cost of upgrading 180 F-4Ds for the air defense role to be about \$540 million. The study concluded that F-4D aircraft modernized with proven systems would be the most cost effective and operationally effective means to achieve air defense modernization, readiness, and force structure objectives. The report noted that no additional service life investment in F-4Ds would be required for 15 years.

THE AIR FORCE HAS TYPICALLY USED OLDER TAF AIRCRAFT FOR STRATEGIC AIR DEFENSE

The strategic air defense mission, in many respects, is not as demanding as the TAF missions. The strategic air defense fighter does not need the agility or sophisticated avionics (jammers, radar warning receivers, low altitude navigation, etc.) required by our front-line fighters in TAF. Air defense fighters do not need to counter an enemy ground threat or high

¹If costs were not an issue, the best available aircraft for this mission would be the Navy's F-14, with its long range radar and its long range Phoenix air-to-air missile. The Air Force's F-15, which is now part of the strategic air defense forces would be the next best aircraft, with its radar capability and its Sparrow medium range air-to-air missile.

performance fighter aircraft to carry out its mission. Further, the air defense forces are supplemented with the TAF's front-line fighters stationed in the United States, which also stand alert. The Air Force, therefore, is not solely dependent on the air defense forces to defend the United States unless all of the TAF fighters are deployed elsewhere. For these reasons, the Air Force has historically filled the air defense requirement by rotating older aircraft from TAF to the air defense forces and placing new aircraft in TAF to handle the more demanding missions.

Currently, there are 14 squadrons--11 Air National Guard and 3 active--in the strategic air defense forces. Prior to the competition, the Air Force had planned to rotate F-16A aircraft into the 11 Air National Guard air defense squadrons to replace F-4s and F-106s and put all new aircraft into TAF. Older F-15 aircraft have already been rotated from TAF to the three active Air Force air defense squadrons. In this way both forces would be upgraded. The competition would result in 270 new fighters going to the Air National Guard air defense forces. The F-16A aircraft will remain in TAF and F-4 aircraft may be retired sooner than originally planned.

The F-16A, equipped with a beyond visual range air-to-air missile, offers about the same overall air defense capability as the F-20 and F-16SC aircraft. Air Force officials identified six primary performance measures for determining overall air defense capability. These were (1) the radar's detection capability, (2) the types of air-to-air missiles carried, (3) range, (4) payload, (5) loiter time, and (6) scramble time. Although some individual capabilities vary, Air Force comparative data shows that F-16A aircraft offers about the same overall air defense capability as the F-20 and F-16SC aircraft.

PLANNED ANNUAL FIGHTER PROCUREMENTS INCREASED

The Air Force's February 1984 tactical fighter roadmap outlined its plans to modernize and increase the number of fighters in TAF from 36 to 40 wings, an increase of about 400 aircraft,² by 1991 and modify existing aircraft to increase their capability. The Air Force planned to achieve this objective by both acquiring 276 new aircraft per year and allowing the average age of the fleet to grow by keeping

²The Tactical Air Command estimates it needs about 100 aircraft for every fighter wing--72 for operations, 18 for training, 9 for back-up, and 1 for testing.

existing aircraft longer. However, with the acquisition of new air defense fighters in fiscal year 1988, the Air Force will begin to procure 324 fighter aircraft per year, 48 more than in its original roadmap. (See app. II.) If the fighter competition were not continued, the Air Force could reduce its fighter procurement costs by about \$4 billion over a 6-year period, as shown in table I.1.

The Air Force's planned growth to its 40-wing TAF goal has been slowed because of competing demands for limited defense dollars. The Air Force anticipated aircraft growth for TAF to be slowed further because of the 270 fighter aircraft for the air defense forces. However, the Department of Defense provided additional procurement dollars for fighter aircraft during the fiscal year 1987 budget cycle. This, together with reducing its requirements for more expensive fighter aircraft, has enabled the Air Force to return to near its original roadmap goal of 276 aircraft per year without substantially degrading overall TAF capability. To accomplish this, the Air Force (1) dropped its requirement for a more expensive F-16F to provide greater range and payload for air-to-ground missions, (2) requested 120 F-16CMs instead of the more expensive F-16Cs, and (3) reduced its annual procurement of F-15s from 60 to 48.

Table I.1: Strategic Air Defense Competition Procurement Funding Schedule

	Fiscal Year						Total
	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	
	----- (millions) -----						
Development	\$ -	\$ -	\$ 28	\$ -	\$ -	\$ -	\$ 28
Procurement	<u>192</u>	<u>447</u>	<u>837</u>	<u>896</u>	<u>905</u>	<u>776</u>	<u>4,053</u>
Total	<u>\$192</u>	<u>\$447</u>	<u>\$865</u>	<u>\$896</u>	<u>\$905</u>	<u>\$776</u>	<u>\$4,081</u>

AIR FORCE AIRCRAFT PROCUREMENT PLANSBEFORE AND AFTER FIGHTER COMPETITION

<u>Type of aircraft</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>
<u>Before competition^a</u>							
TAF:							
F-16C/D	216	216	216	212	168	144	96
F-16F	-	-	-	4	48	72	120
F-15C/D	52	12					
F-15E	8	48	60	60	60	60	60
Total	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>
Air defense:	-	-	-	-	-	-	-
Total	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>	<u>276</u>
<u>After competition^b</u>							
TAF:							
F-16C/D	180	96	96	96	96	96	96
F-16CM	-	120	120	120	120	120	120
F-15C/D	40	-	-	-	-	-	-
F-15E	8	48	48	48	48	48	48
Total	<u>228</u>	<u>264</u>	<u>264</u>	<u>264</u>	<u>264</u>	<u>264</u>	<u>264</u>
Air defense: ^c							
F-16SC/F-20	-	30	60	60	60	60	-
Total	<u>228</u>	<u>294</u>	<u>324</u>	<u>324</u>	<u>324</u>	<u>324</u>	<u>264</u>

^aFrom February 1984 tactical fighter roadmap briefing.

^bFrom fiscal year 1987 budget submission.

^cFrom the air defense procurement office.

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