



DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

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12 FEB 1976

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: F- 18 Program - INFORMATION MEMORANDUM

The attached F-18 Background Paper is forwarded in response to the direction of Colonel Elmer T. Brooks of your staff.

Malcolm R. Currie

Attachment

452 F-18 C-54

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17 FEB 1976

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Argument has been that F-18 is LOW MIX fighter (60% as costly to buy as F-14) and F-14 is HIGH MIX. This paper casts the argument in terms of savings over 15-year life cycle resulting in \$4-\$5 billion (provided you buy 800)

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F-18 BACKGROUND PAPER

The F-18 Requirement

The purpose of the F-18 program is to develop an advanced tactical combat aircraft which will fulfill both fighter and attack missions. As a fighter, the F-18 will complement the F-14 and will replace the F-4 aircraft in 6 Navy and 12 USMC squadrons. The F-18 can adequately perform most "bread and butter" fighter missions such as strike, escort and armed reconnaissances, thus freeing the F-14 for its primary mission of fleet air defense (FAD). As an attack aircraft, the F-18 will replace the USN/USMC A7 fleet and will become the primary jet light attack vehicle. The attack version of the F-18 has range and payload comparable to the A7 and its flying qualities and performance are superior. It can employ all current and planned weapons.

The F-18 provides substantial cost advantages over the alternatives and makes significant contributions to increased readiness by (1) improved reliability and maintainability, (2) greatly reduced manning requirements, (3) lowered logistic support, and (4) reduced operating costs. In short, the F-18 is affordable and suitable in addition to being capable.

Costs - as Compared to the F-14

The development cost of the F-18 includes 11 test (R&D) aircraft and is estimated (by the Program Office, PMA 265) to be about \$1.4 billion in 1975 dollars. The F-18 development program should take about 58 months to complete. By way of comparison, the F-14A development program cost \$1.3198 billion in then year dollars and took about 5 years from start to finish. The F-14A development program included 12 R&D aircraft, but one aircraft was lost in a catastrophic accident early in the program in December 1969. The estimated F-18 unit flyaway cost is \$5.8 million (in 1975 dollars for 800 aircraft). Based on the \$5.8 million estimated unit flyaway cost, program cost savings as compared to the F-14A may be computed as follows: If only the Navy "fighter" (VF) needs are considered, an additional 500 F-14A aircraft would have to be procured in lieu of the F-18. The unit flyaway cost of these aircraft is estimated to cost \$4-5 million more than F-18 aircraft produced at the same rate. These additional F-14A aircraft would therefore cost from \$2.0 billion to \$2.5 billion more than the 500 F-18 fighters needed. Current estimates project a savings of \$0.5 million per aircraft per year for operating the



F-18 instead of the F-14A. Thus, if a 15-year service life is considered, and 70% of the aircraft (350 out of 500) are operating, the F-18 will save \$175 million per year or more than \$2.5 billion in 15 years. The Navy plans to use 300 of the F-18 aircraft to replace its A7 fleet. The cost of these 300 F-18s will exceed the cost of a like number of A7s by about \$400 million. However, in the absence of the F-18 the Navy would be forced to develop a new light attack aircraft by the mid-1980s. The unit cost of these aircraft would at least equal and probably exceed the F-18 because of the lower numbers procured. Development of this new attack aircraft would also require about a \$1.0 billion investment in the development program. In summary, the F-18 program should result in a total savings of from \$4.5 to \$5.0 billion, and this would not change significantly for a wide range of assumptions on either side.*

Another cost consideration is the "break even" point for the F-18 as compared to the F-14A. This is the point in the production schedule of a new product where the costs incurred in program start-up are offset by the savings resulting from the new product. This is the answer to the question, "How many F-18s do we need to buy and operate to make a net savings?" This number has been calculated by CAIG to be about 250 aircraft (350-400 if discounting is applied). Clearly, since the Navy is planning to buy more than 250 aircraft, and operate them probably in excess of 15 years; the F-18 is a sound investment.

List of Hearings

<u>Date</u>	<u>Hearing</u>
8 Oct 75	TACAIR Subcommittee, SASC
9 Oct 75	Currie Discussion, SASC Staff
15 Oct 75	House Appn Vote
14 Nov 75	Senate Appn Vote

***DepSecDef to Appropriations Committee, 22 October 1975 (based on information provided by the Navy).**



Key Vote Count

<u>Date</u>	<u>House *</u>		<u>Senate *</u>	
	For	<u>Against</u>	<u>For</u>	<u>Against</u>
10-15-75				
Demo	136	138		
Rep	107	35		
11-14-75			64	19
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	243	173	64	19

***18 "No-Vote" in House, 17 in Senate.**

Size of Program

The F-18 is expected to include 800 aircraft and cost \$13.430 billion in "then year dollars".

