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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

PROCUREMENT AND SYSTEMS ACQUISITION DIVISION

RELEASED

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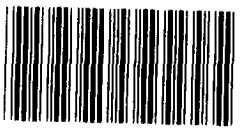
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The Honorable John C. Danforth
United States Senate

Dear Senator Danforth:

Subject: [Cost Estimates for U.S. and Canadian F/A-18 Strike Fighters] (PSAD-80-74)

This is in response to your April 30, 1980, request for information on the cost of the F/A-18 strike fighter. We are currently reviewing the F/A-18 program and plan to issue a report to the Congress in February 1981.

Your constituent's letter mentioned three cost estimates for the Navy's program that were shown in our February 14, 1980, report 1/ as follows:

Cost estimate	Quantity	Amount (billions)	Cost per aircraft (millions)
Original	811	$12.9	$15.9
Current	1,377	24.0	17.4
Actual	1,845	a/30.0	16.2

a/Although labeled "actual cost" by your constituent, this amount, like the two other program amounts, is an estimate.

1/"F/A-18 Naval Strike Fighter: Its Effectiveness Is Uncertain," PSAD-80-24, Feb. 14, 1980.

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The letter also mentioned a news article which stated that Canada had ordered at least 137 F/A-18 aircraft at an estimated cost of $2.9 billion, or $21.1 million per aircraft. Your constituent stated that he could not understand the variance in the unit cost per aircraft.

On the surface, it does seem unreasonable that the unit cost estimate for 811 aircraft (the "original" estimate) would be lower than the estimate for 1,377 aircraft or 1,845 aircraft. However, the original estimate, which is based on the approved number of aircraft when the program entered full-scale development, was prepared in 1975--about 4 years earlier than the other two estimates which were made in 1979. The current estimate was based on the quantity of aircraft in the approved program at that time. The actual estimate included additional aircraft that Navy officials estimated would be required to satisfy the Navy's needs. The cost per aircraft in the original estimate is lower than for the other two estimates primarily because the original estimate contains proportionately less provision for inflation and is based on the procurement of a greater number of fighter versions, which cost less than the attack and trainer versions. In addition, the later estimates include an even more costly reconnaissance version and reflect lower production rates. The later estimates also reflect subsequent factors (as described in ch. 4 of our report) which increased the cost of the aircraft.

Regarding the unit cost of the Canadian aircraft, the dollar amounts in the article quoted by your constituent are inaccurate. The Canadian contract calls for 137 aircraft at a cost of about $2.4 billion. This is a unit cost of about $17.5 million. This estimate is lower than the unit cost of U.S. aircraft which will be delivered over the same time period. However, the estimate for the Canadian purchase does not include research and development costs and certain nonrecurring production costs. Canada has requested a waiver of the research and development costs, and the Department of Defense is considering the request.

In addition, numerous other factors must be considered in comparing the unit cost estimates for the U.S. and Canadian aircraft, including the following:

--The Canadian purchase is a direct sale transaction between Canada and the F/A-18 prime contractor.

--The Canadian purchase represents a commitment for the full procurement quantity (with allowances for adjustments), whereas the U.S. purchase must be approved in increments each year.

--The Canadian contract calls for a fixed conversion rate for U.S. and Canadian currency.

--Considerable industrial benefits will result for Canada. A portion of the F/A-18 aircraft will be produced in Canada, and the F/A-18 prime contractor has agreed to conduct a significant amount of commercial transactions with Canadian industry through 1995.

--The Canadian aircraft will be produced on the same production line as the U.S. aircraft. The impact of the Canadian purchase on the cost of U.S. aircraft has not yet been determined.

--The periodic payment provisions of the Canadian contract are more attractive to the contractor than provisions in U.S. contracts which limit periodic payments to 80 percent of costs.

Your constituent also requested the percent learning curve that is being used in the program and the actual cost of unit number one. Costs were not estimated by specific aircraft; rather, they were estimated by production lot. So far, 13 F/A-18 aircraft have been flown. The first 11 are full-scale development aircraft, and the last 2 are part of the 9 pilot production aircraft. Since pilot production is not complete, total actual costs for this effort are not available. However, the Navy's fiscal year 1981 budget justification includes the following quantity and cost estimates for the U.S. production program.

Planned F/A-18 Unit Procurement Cost by Fiscal Year in Which the Procurement Is Authorized

Fiscal year	Quantity	Procurement cost (note a)	Procurement cost per aircraft
		----------(millions)----------	
1979	9	$ 514.2	$57.1
1980	25	1,046.7	41.9
1981	48	1,644.8	34.3
1982	96	2,412.5	25.1
1983	147	2,890.9	19.7
1984	174	3,073.4	17.7
1985	191	3,470.2	18.2
1986 and beyond	676	11,882.3	17.6
Total	1,366	$26,935.0	19.7

a/Cost includes initial spares. Also, amounts have been adjusted to include the advanced funding requested in the prior year.

The above estimates do not include military construction and research, development, test, and evaluation costs of over $2.2 billion. If considered, these costs would increase the program unit cost from $19.7 million to $21.2 million. In addition, these estimates do not include the effect that the Canadian purchase will have on the Navy's program.

Regarding learning curves, the prime contractor has projected separate "improvement slopes," which describe efficiencies expected in 4 production processes between the 9th and 30th aircraft. These slopes show that labor hour requirements for aircraft number 30 are expected to be the following percentages of labor hour requirements for aircraft number 3.

Process	Improvement slope
Fabrication	89%
Major assembly	80
Final assembly	70
Production flight checkout	75

As requested, we are returning the correspondence you sent to us on this matter.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days from the date of the report. Since your constituent also sent the request directly to GAO, we will send a copy of this report to him at that time. We will also send copies to interested parties and make copies available to others upon request.

We hope this information satisfies your request. Let us know if we can be of further assistance.

Sincerely yours,

W. H. Sheley, Jr.
Acting Director

Enclosure