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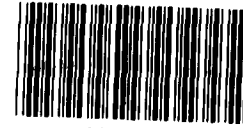
UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

PROCUREMENT, LOGISTICS,  
AND READINESS DIVISION

B-209928

DECEMBER 15, 1982

The Honorable Joseph P. Addabbo  
Chairman, Subcommittee on Defense  
Committee on Appropriations  
House of Representatives



120121

Dear Mr. Chairman:

Subject: Combined Procurement of Spare Parts and Production  
Components Will Reduce Defense Weapon System Costs  
(GAO/PLRD-83-17)

In response to your February 2, 1982, letter and subsequent discussions with your office, we reviewed Department of Defense (DOD) plans to buy spare parts concurrently with production components and the cost savings of doing so. We emphasized the use of the combined procurement procedure in the F/A-18 aircraft program and its effect on the budget. We found that:

- The Navy did not fully implement the procedure on the F/A-18 in fiscal year 1982 and did not achieve the \$30 million savings estimate provided to the Congress.
- Full implementation of the procedure on the F/A-18 is planned to start in fiscal year 1983. Navy officials estimate that using the combined procurement procedure could reduce the cost of production components and spare parts by 10 to 20 percent. At these rates the savings could range from \$600 million to \$1.2 billion over the life of the program.
- Neither the fiscal year 1983 budget request nor the 5-year defense program submission reflect the savings that may result from using the combined procurement procedure in the F/A-18 program.
- Use of the procedure on other weapon systems will be limited during fiscal year 1983.

The combined procurement procedure is a technique whereby orders for spare parts are consolidated with orders for production

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components so that the contractor achieves one overall production schedule. Consolidation of orders is a practice followed by industry to reduce unit production costs. Savings are achieved through economies of scale, which avoids costs associated with separate orders and manufacturing actions.

We made our review at the Office of the Secretary of Defense, the headquarters of the military services, the Naval Air Systems Command, and the Naval Aviation Supply Office. Our review was performed in accordance with generally accepted government audit standards. Our analysis of F/A-18 program savings was based on Navy budgetary and cost information, cost data furnished to us by the F/A-18 prime contractor, and interviews with Navy officials.

THE COMBINED PROCUREMENT PROCEDURE  
WAS NOT FULLY IMPLEMENTED IN FISCAL  
YEAR 1982

In a June 29, 1981, decision memorandum the Secretary of Defense directed the Navy to use the combined procurement procedure in the F/A-18 program where it was economical and met system readiness objectives. Disagreement within the Navy on how to implement the procedure in the F/A-18 program was the primary cause for not achieving the projected savings of \$30 million during fiscal year 1982. The disagreement revolved around whether the Navy should order certain spares through the prime contractor, McDonnell Douglas, or order them directly from the vendors and require the vendors to combine the production and spares orders for pricing.

F/A-18 officials at the Naval Air Systems Command wanted spares for 12 systems, such as the radar, ordered through the prime contractor to insure an estimated 15- to 20-percent price reduction for the production components. Officials at the Naval Aviation Supply Office wanted to order spares directly from the vendors and save the prime contractor's 10- to 15-percent management fee. Aviation Supply Office officials felt the fee would negate most, if not all, of the spares' savings to be achieved using the combined procurement procedure.

Discussions within the Navy and with the prime contractor lasted more than 6 months before the Navy decided, in December 1981, to order all spares directly from the 18 vendors and have the vendors integrate the spares orders with the prime contractor's production order and provide a single pricing quote for both. The time required to reach this decision and coordinate the procedure with vendors precluded the use of the procedure for buying most F/A-18 spares during fiscal year 1982.

Of the spares orders placed with the 18 vendors during fiscal year 1982, only 1 was fully integrated with the prime contractor's production order. The order was placed with the Bendix Corporation for the horizontal situation indicator system. The Navy estimates that it saved about 10 percent (\$1.1 million) by using the combined procurement procedure on this order. Sufficient data was not available for us to verify the savings.

F/A-18 SAVINGS COULD BE SUBSTANTIAL

In July 1981, the Navy estimated that using the combined procurement procedure would reduce F/A-18 procurement costs by \$250 million to \$330 million. Navy officials, however, could not furnish detailed documentation supporting this estimate. Based on the decision to buy all spares directly from the vendors and additional program information provided by the Navy, the savings may be even greater.

Naval Aviation Supply Office officials estimate that savings of 10 percent can be realized by using the procedure. Naval Air Systems Command officials anticipate savings of 15 to 20 percent. At these rates, the savings on production components and spares could range from \$600 million to \$1.2 billion over the life of the F/A-18 program.

Enclosure I gives details on the estimated cost of production components and spares used as the base for applying the savings rates. Enclosure II breaks down the anticipated savings by year. As in the case of earlier estimates, the anticipated savings must be considered tentative because of the lack of empirical supporting data.

F/A-18 BUDGET REQUEST DOES NOT REFLECT ANY COST SAVINGS

According to Navy officials, the F/A-18 budget request for fiscal year 1983 and the 5-year defense program submission do not reflect any cost savings that may be realized from using the combined procurement procedure.

Naval Aviation Supply Office officials said that any savings from using the procedure would be used to reduce unfunded spares requirements for the F/A-18 program. Naval Air Systems Command officials also did not indicate any plans to reduce the F/A-18 production and spares funding requests as a result of using the procedure. We disagree with the Navy officials and believe that the cost savings should be reflected in future F/A-18 funding requests.

USE OF THE COMBINED PROCUREMENT  
PROCEDURE FOR OTHER SYSTEMS WILL  
BE LIMITED DURING FISCAL YEAR 1983

DOD has not directed the use of the procedure on any other weapon systems. However, a proposed revision to DOD Directive 4140.40, "Basic Objectives and Policies on Provisioning of End Items and Materials," will require that consideration be given during the acquisition process to ordering spares concurrently with production components.

The Navy's use of the combined procurement procedure on other weapon systems has been limited. It did use the procedure to make multiyear purchases of six items for the A-6E/EA-6B aircraft during fiscal year 1982 and seven items for the P-3C aircraft during fiscal year 1981. The Navy estimates that combining the spare and production orders for these items would save an estimated \$3.7 million (19.6 percent) over the 5-year purchase period. The Navy is studying the expansion of the procedure to the AV-8B and SH-60B aircraft.

The Air Force has been using the procedure to buy certain initial spares through the prime contractor for a number of years. It plans to use the procedure during fiscal year 1983 to buy certain initial spares for the EF-111A aircraft, the C-141 aircraft improved navigation system, and the ASP-133 all-weather radar. The Air Force has not estimated the savings.

The Army has no plans to use the procedure during fiscal year 1983.

CONCLUSIONS

The Navy did not fully implement the combined procurement procedure for buying F/A-18 spares during fiscal year 1982 and did not achieve the \$30 million savings estimate provided to the Congress. However, it plans to fully implement the procedure on the F/A-18 starting in fiscal year 1983. This could reduce the cost of production components and spare parts for the F/A-18 by \$600 million to \$1.2 billion. For fiscal year 1983 alone, the savings could be between \$43 million and \$85 million. These savings, however, are not reflected in the 1983 budget request or the 5-year defense program submission.

The F/A-18 aircraft is the first weapon system on which the combined procurement procedure will be fully implemented. Although estimates of the savings have been made, they are uncertain because of a lack of empirical data. By closely monitoring the Navy's use

of the procedure during fiscal year 1983, the Secretary of Defense should be in a position to firmly quantify its benefits and direct its use on other weapon systems. As it is now, only limited use of the procedure will be made on other weapon systems during fiscal year 1983.

One way to quantify the benefits would be to compare the unit prices, adjusted for inflation, paid during fiscal year 1982 without using the procedure with the prices paid during fiscal year 1983 using the procedure. Another technique would be to require the vendor to submit two pricing proposals--one for the integrated buy under the combined procurement procedure and the other with separate quotes for the production order and the spares order without integrated production.

In our September 9, 1981, report, "Less Costly Ways To Budget and Provision Spares for New Weapon Systems Should Be Used" (PLRD-81-60), we recommended that the Secretary of Defense direct that other weapon systems be evaluated for potential use of the combined procurement procedure. We continue to believe this procedure offers great potential for savings, and we believe validation of the savings on the F/A-18 will strengthen its adoption on other weapon systems.

#### AGENCY COMMENTS

On October 29, 1982, we met with Defense officials and obtained their official oral comments. They generally agreed with our findings and indicated that they would verify the savings on the F/A-18 during fiscal year 1983 by using the combined procurement procedure. They cautioned, however, that a comparison of fiscal year 1982 and 1983 prices may not be meaningful on all items because of changes in configuration and quantities.

The officials also stated that a task group would be formed to (1) draft guidelines for using the combined procurement procedure on weapon systems and (2) study ways to verify cost savings and to select items to be purchased under the procedure.

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As arranged with your office, we are sending copies of this report to the Director, Office of Management and Budget; the Chairmen, House Committee on Government Operations, Senate Committee on Governmental Affairs, and House and Senate Committees on Appropriations and on Armed Services; and the Secretaries of

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Defense, the Army, the Navy, and the Air Force. Copies will be made available to other interested parties upon request.

Sincerely yours,

A handwritten signature in cursive script that reads "Donald J. Horan".

Donald J. Horan  
Director

Enclosures - 2

ESTIMATED COST OF F/A-18 PRODUCTIONCOMPONENTS AND SPARES

	<u>FY 1983</u>	<u>FY 1984</u>	<u>FY 1985</u>	<u>FY 1986</u>	<u>FY 1987</u>	<u>To complete</u>	<u>Total</u>
<b>Program data:</b>							
Number of aircraft (note a)	84	96	108	132	132	657	1,209
<b>Aircraft cost</b>							
(millions) (note a)	<u>\$2,109.3</u>	<u>\$2,218.0</u>	<u>\$2,385.9</u>	<u>\$2,832.4</u>	<u>\$2,926.7</u>	<u>\$14,623.6</u>	<u>\$27,075.9</u>
<b>Production components:</b>							
Cost for 12 systems (millions) (note b)	<u>\$ 320.0</u>	<u>\$ 336.5</u>	<u>\$ 358.9</u>	<u>\$ 429.7</u>	<u>\$ 444.0</u>	<u>\$ 2,218.4</u>	<u>\$ 4,107.5</u>
<b>Spares</b>							
(note c):							
Initial (millions)	\$ 63.5	\$ 69.5	\$ 54.3	\$ 38.5	\$ 34.0	\$ 52.1	\$ 311.9
Replenishment (millions)	<u>41.4</u>	<u>159.6</u>	<u>109.6</u>	<u>164.6</u>	<u>188.6</u>	<u>939.5</u>	<u>1,603.3</u>
Total (millions)	<u>\$ 104.9</u>	<u>\$ 229.1</u>	<u>\$ 163.9</u>	<u>\$ 203.1</u>	<u>\$ 222.6</u>	<u>\$ 991.6</u>	<u>\$ 1,915.2</u>

a/The number and flyaway cost of the aircraft was provided by the program office at the Naval Air Systems Command. The flyaway cost includes the cost of production components but not the cost of spares.

b/The production component cost estimate covers only the 12 systems originally selected by the Naval Air Systems Command for the combined procurement procedure. Contractor cost data was not available on the remaining 36 systems. The cost of the selected systems is based on fiscal year 1982 costs. McDonnell Douglas' unit cost of \$3.45 million for the 12 systems was divided by the unit aircraft cost of \$22.74 million to arrive at a ratio of 15.17 percent. The cost of the 12 systems for fiscal year 1983 and the following years was computed by applying this percentage to the aircraft cost for those years.

c/The cost of the spares covers all 48 systems. The data was provided by the supply requirements office at the Naval Air Systems Command.

## ESTIMATED F/A-18 COST SAVINGS

## USING COMBINED PROCUREMENT PROCEDURE (note a)

	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	To complete	Total
----- (millions) -----							
10-percent savings (note b):							
Production	\$32.0	\$ 33.7	\$ 35.9	\$ 43.0	\$ 44.4	\$221.8	\$ 410.8
Spares	10.5	22.9	16.4	20.3	22.3	99.2	191.6
Total	<u>\$42.5</u>	<u>\$ 56.6</u>	<u>\$ 52.3</u>	<u>\$ 63.3</u>	<u>\$ 66.7</u>	<u>\$321.0</u>	<u>\$ 602.4</u>
15-percent savings (note b):							
Production	\$48.0	\$ 50.5	\$ 53.8	\$ 64.5	\$ 66.6	\$332.8	\$ 616.2
Spares	15.7	34.4	24.6	30.5	33.4	148.7	287.3
Total	<u>\$63.7</u>	<u>\$ 84.9</u>	<u>\$ 78.4</u>	<u>\$ 95.0</u>	<u>\$100.0</u>	<u>\$481.5</u>	<u>\$ 903.5</u>
20-percent savings (note b):							
Production	\$64.0	\$ 67.4	\$ 71.8	\$ 86.0	88.8	\$443.6	\$ 821.6
Spares	21.0	45.8	32.8	40.6	44.6	198.4	383.2
Total	<u>\$85.0</u>	<u>\$113.2</u>	<u>\$104.6</u>	<u>\$126.6</u>	<u>\$133.4</u>	<u>\$642.0</u>	<u>\$1,204.8</u>

a/As indicated in enclosure I, the spares savings relate to all 48 systems, but the production savings relate only to the 12 systems for which cost data was available.

b/The 10-percent savings rate was estimated by Naval Aviation Supply Office officials and the 15- and 20-percent rates by Naval Air Systems Command officials.