

February 1996

# NAVY AVIATION

## AV-8B Harrier Remanufacture Strategy Is Not the Most Cost-Effective Option





**National Security and  
International Affairs Division**

B-270424

February 27, 1996

The Honorable William J. Perry  
The Secretary of Defense

Dear Mr. Secretary:

As part of our work on Navy tactical aviation programs, we reviewed the Marine Corps \$2.2 billion AV-8B Harrier Remanufacture Program (REMAN). Under the program, 72 of the older AV-8B aircraft with day attack capabilities will be rebuilt so that they have the night attack and radar capabilities that the most recently procured AV-8B radar attack aircraft have.

Our objective was to assess whether rebuilding the day attack aircraft instead of buying more of the radar attack aircraft is the more cost-effective option.

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**Background**

Introduced in 1993, the AV-8B aircraft with night attack and radar capabilities enhances pilots' abilities to locate and destroy targets under conditions of marginal weather, limited visibility (smoke, dust, or haze), and darkness. The two previously produced models had significant limitations. The day attack model, the first version of the aircraft procured by the U.S. Marines in 1982, has limited capability during the hours of darkness because the pilots cannot refer to the terrain and horizon to assist in maneuver, navigation, and attack. The night attack version, introduced into the fleet in 1989, has increased capabilities over the day attack version but still has limitations. Its Angle Rate Bombing System, used by the day and night attack models for weapons aiming and delivery, is not effective at night or during adverse weather conditions. In addition, the night attack version's forward looking infrared system, which assists in navigation during hours of darkness, is degraded by air moisture.

All the prior upgrades to the AV-8B—from day to night attack models and then to models with the improved radar configuration—have been made by producing new models. Aircraft have not been rebuilt or modified. The Marines plan to deviate from this practice with REMAN.

Under REMAN, the Marines plan to award single-year contracts to remanufacture 72 of the day attack model aircraft and convert them to aircraft with night attack and radar capabilities over a 10-year period. The

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day attack aircraft are to be transported to the Naval Aviation Depot (NADEP) in Cherry Point, North Carolina. There, the aircraft are to be tested for flight worthiness and then disassembled. About \$6 million worth of parts from each aircraft are to be returned to the supply system and about \$11.3 million of designated components and assemblies from each aircraft are to be either used in their current condition, refurbished, or modified for reuse in the REMAN program. The components and assemblies are to be sent to the contractor, McDonnell Douglas Aerospace Company in St. Louis, Missouri. The contractor is to integrate these used components and assemblies, along with a new fuselage, a new engine, and an APG-65 radar system, to produce the final REMAN aircraft. The first REMAN aircraft is scheduled for delivery in February 1996.

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## Results in Brief

Our review showed that it would be more cost-effective to procure new AV-8B radar attack aircraft than to rebuild the day attack aircraft. The Navy estimates that it will cost between \$23 million and \$29.5 million to remanufacture each AV-8B aircraft. The AV-8B program office did not have a current cost estimate for producing additional radar model aircraft. Therefore, we used cost data from the radar model aircraft procured in 1991 as our base. We calculated that for about \$23.6 million per aircraft, the Marines could procure new radar model AV-8Bs rather than remanufactured aircraft made up largely of used and refurbished components. Because the REMAN is conducted under an annual contract, the Navy could revise its procurement strategy and begin immediate negotiations to buy new radar models rather than continue to contract annually to remanufacture the aircraft.

The accuracy of the Marine Corps cost estimates and the overall success of the REMAN program are contingent on the Navy's ability to provide the required reusable components to the contractor in a manner that will not cause production delays and the resulting cost increases. However, it is questionable whether NADEP in Cherry Point, North Carolina, can meet production schedules and cost targets. The first aircraft has taken almost twice as many staff hours to disassemble as planned. Although the depot expects to reduce the disassembly time as it gains experience with the process, the required time will still exceed the amount originally planned. Delays have also resulted from the inability of McDonnell Douglas and NADEP vendors to provide components in a timely fashion. Also, the APG-65 radar assets that are to be used in the AV-8B aircraft are not going to be available as originally planned.

## New Production Is a More Cost-Effective Procurement Strategy

Considering the costs associated with inducting an aircraft into the REMAN program, disassembling, refurbishing, and modifying components and assemblies; the value of components and assemblies furnished to the contractor; and economies available through multiyear procurement, our review indicated that the REMAN program is not the most cost-effective procurement approach. It would be feasible for the Navy to revise its acquisition strategy because the contractor’s production line and facilities are still in place and ready for continued production of radar model AV-8B aircraft.

During our review, we compared past procurement cost figures (adjusted for inflation) with current REMAN program cost estimates. We also assessed the impact of multiyear procurement on new production cost estimates due to recommendations by the Department of Defense (DOD) Inspector General and recent congressional interest.

Twenty-one radar aircraft were procured in 1991 at an average unit flyaway cost of \$22.4 million.<sup>1</sup> Six more were procured in 1992 to replace aircraft lost during Desert Storm at an average unit flyaway cost of \$31.9 million—a 42-percent increase that the program office explained was due to the small quantity procured. Table 1 shows the procurement history of the AV-8B program.

**Table 1: AV-8B Harrier Procurement Cost History (fiscal years 1982-92)**

Millions of dollars

	Day attack aircraft						Night attack aircraft			Radar aircraft	
	FY82	FY83	FY84	FY85	FY86	FY87 <sup>a</sup>	FY88	FY89	FY90	FY91	FY92
Units <sup>b</sup>	12	21	27	32	46	42	24	24	24	21	6
Flyaway cost	\$544	\$536	\$507	\$499	\$696	\$625	\$388	\$468	\$422	\$471	\$192
Unit cost	\$45.3	\$25.5	\$18.8	\$15.6	\$15.1	\$14.9	\$16.2	\$19.5	\$17.6	\$22.4	\$31.9

<sup>a</sup>Fiscal year 1987 includes three night attack aircraft.

<sup>b</sup>Includes trainer aircraft.

The AV-8B program office does not have a current cost estimate for producing additional radar aircraft. Therefore, to facilitate a comparison of REMAN and probable new production costs, we used the fiscal year 1991 flyaway cost as a baseline because of its more efficient production rate (21 aircraft).

<sup>1</sup>Cost related to the production of a usable radar model AV-8B.

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Using Navy indexes, we escalated the average unit cost of fiscal year 1991 procurement (\$22.4 million) by 7.5 percent (\$24.1 million) to account for inflation.<sup>2</sup> Then, using DOD data on potential savings from a multiyear procurement strategy for engines,<sup>3</sup> we determined that the cost of new aircraft would be about \$23.6 million per aircraft, without having provided the contractor the additional \$11.3 million worth of reused, government-furnished components and assemblies. We discussed this methodology with DOD officials and they did not disagree. According to program documents, under the REMAN acquisition strategy, the Navy expects to pay between \$23 million and \$29.5 million for each aircraft, exclusive of the value of reused government-furnished equipment.

In June 1994, the DOD Inspector General reported that the Navy could save over \$150 million by pursuing a multiyear procurement strategy for REMAN. On the basis of that report, the Fiscal Year 1995 Senate Appropriations Committee Report directed the Navy to address multiyear procurement. The Navy rejected the multiyear procurement strategy and in a March 1995 letter to the House and Senate Appropriations Committees stated

“The remanufacture program commenced in fiscal year 1994 and has not completed a full manufacturing cycle. Therefore, process performance is not yet fully validated and extrapolation of cost savings are estimates based on the prime contractor’s manufacturing process used in past production of new AV-8B aircraft of the same configuration. While total quantities appear firm and the requirement remains valid, a more appropriate time to consider a multi-year procurement acquisition strategy would be after the remanufacturing costs are substantiated, and we are comfortable that no system degradation has occurred as a result of remanufacture. We will then be in a position to make a recommendation with regards to a multiyear procurement plan for fiscal year 1998.”

If the program continues as planned, by 1998, procurement contracts will have been initiated to remanufacture 50 percent of the 72 aircraft planned for the REMAN program. Further, our review of the Navy’s procurement history for this aircraft (see table 1) showed that the contractor has demonstrated the capability to produce new AV-8B aircraft at a more efficient rate than the procurement schedule for the REMAN program shown in table 2.

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<sup>2</sup>From fiscal year 1991 through fiscal year 1994, the inflation rate was 7.5 percent.

<sup>3</sup>The airframe portion of the fiscal year 1991 procurement was a multiyear acquisition and, therefore, it is not included in our calculation.

**Table 2: AV-8B REMAN Procurement Schedule (fiscal years 1994-2003)**

	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Total
Aircraft procurement	4	4	4	12	12	12	12	12	•	•	72
Aircraft delivery	•	•	3	5	4	12	12	12	12	12	72

Accelerated production to the fiscal year 1991 level would be a more cost-effective approach than the low rate being requested by the Navy, and would provide the Marine Corps with increased combat capability at a more efficient production rate. On the other hand, NADEP does not have the ability to disassemble the aircraft or refurbish and modify components and assemblies for reuse by the contractor under the REMAN program at the rate needed to support a production rate comparable to that available under new production.

## Navy's Role Is Key to REMAN Success

The NADEP at Cherry Point, North Carolina, has been tasked to disassemble the day attack aircraft removed from the fleet, ensure that the components and assemblies to be reused in the process of producing the radar version are in ready-for-use condition, and deliver these parts to the contractor. Each of the reused components and assemblies has a defined delivery schedule, which if not met will delay production at the contractor's facility and increase program costs. The Navy's ability to deliver the components and assemblies on schedule is questionable.

According to NADEP officials, since the remanufacture program was not prototyped, the depot is experiencing many unanticipated problems. Each aircraft has some unique differences that must be resolved in terms of modification, replacement, or repair before a particular component is sent to the contractor for integration in the REMAN aircraft. If the depot does not have a replacement part on hand or the capability to modify or fabricate particular parts and assemblies, it must contract out for the capability or purchase the necessary new parts. All of these options would lead to delays and increased costs.

## Disassembly Process Will Be More Costly Than Planned

The depot has experience in disassembling the AV-8B aircraft from its Age Exploration Program, which evaluates the structural integrity of the aircraft. However, the Age Exploration Program does not require the detailed level of dismantling that is required for the REMAN program. Additionally, unlike in the Age Exploration Program, under the REMAN

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program the depot is required to make over 30 new modifications to components that it has no previous experience making.

In planning support to the REMAN program, the depot budgeted 2,879 staff hours per aircraft for the disassembly functions. However, the process has taken up to 5,100 staff hours for the first aircraft inducted into the program, and the next three aircraft are expected to consume about the same level of effort. Officials at the depot told us that the increase in the time required for the disassembly process was due to the fact that there had not been an opportunity to prototype the process, including the handling of various modifications. This increase in staff hours causes increases in costs and delays in schedule for the program.

The fiscal year 1994 depot labor rate was \$47.05 per hour. With the increase in required staff hours, the cost per aircraft inducted into the program will increase by about \$104,000. Officials at the depot anticipate that the other three aircraft inducted into the REMAN program during fiscal year 1994 will also take about the same level of effort. As the depot technicians and mechanics gain more experience with the disassembly, refurbish, and modification operations, they expect the process to level off at about 4,000 staff hours per aircraft.

Due to an increase in the Defense Business Operating Fund rates, the depot labor rate for fiscal year 1995 was much higher (\$91.59 per hour) than fiscal year 1994 rates. Officials at the depot are optimistic that the rate for fiscal year 1996 will drop to about \$66 per hour. If the labor rates drop to \$66 per hour and stay constant for the remainder of the REMAN program and the depot achieves the estimated level of 4,000 staff hours per aircraft for disassembly, rework, and modification before shipping the kits to McDonnell Douglas, the results would still be an added cost to the program of about \$74,000 per aircraft.

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### On-Time Delivery of Components to Contractor Is Questionable

To begin the disassembly process, four aircraft were inducted into the REMAN program between June and November 1994. The disassembled, modified, and reused-as-is components were scheduled for delivery to the contractor between July 1995 and May 1996, to meet a production delivery schedule of February through November 1996. As of August 1995, a complete set of components for one of the four aircraft inducted in fiscal year 1994 had been delivered to the contractor. Component sets for the other three aircraft, while not yet behind in their delivery schedules, were experiencing delays in their modification and preparation at the depot.



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Depot officials told us that these delays have occurred because of the inability to obtain parts and materials necessary to modify the day attack aircraft components in a timely fashion.

Components from each disassembled aircraft are divided into 22 kits. Several of the components in each kit require some work or modification to be made ready for use before they are included in the respective kits. Each of the NADEP maintenance shops responsible for the modification to these components and assemblies have schedules to maintain, so as not to cause schedule delays in delivering the kits to the contractor. Delays in the receipt of materials required to make components ready for use put the depot at risk for not being able to deliver the components and assemblies to the contractor on schedule. During our visit to the depot in August 1995, we were told by various shop foremen that modification schedules were not being maintained because parts and modification kits they require to make the necessary modifications were not being delivered to the depot on schedule.

The lack of parts and materials needed to make the necessary modifications to upgrade day attack aircraft components to the REMAN program specifications negatively affects the depot's ability to deliver the remanufacture kits to the contractor as scheduled. Some of these delays result from the contractor and NADEP vendors' failure to deliver as scheduled. While we were at the depot in August 1995, we noted a 50-day delay in the receipt of wing modification kits from McDonnell Douglas. According to depot officials, to minimize delays in providing the remanufacture kits to the contractor, arrangements have been made to borrow components and parts from the Aviation Supply Office in Philadelphia. Altimeters ordered from the vendor for the first four REMAN aircraft are a case in point. NADEP and the Aviation Supply Office agreed that when the parts are received from the vendor, the depot will forward them to the Aviation Supply Office as replacements for those borrowed. Costs associated with this innovative depot work-around to avoid schedule delays are increases charged to the REMAN program as an over-and-above cost.<sup>4</sup> A new production strategy would mitigate this cost because the contractor would be furnishing new parts and assemblies as opposed to reused components from the disassembled day attack models being furnished by the government.

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<sup>4</sup>Over-and-above is an allowance used within the REMAN program to allow for corrosion and other repairs on components that are reused.

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## Radar Components May Not Be Available on Schedule

According to Navy officials, over \$130 million will be saved by using excess APG-65 radar assets from the F-18 aircraft in the AV-8B aircraft. In a March 11, 1994, Acquisition Decision Memorandum, the Principal Deputy Under Secretary of Defense for Acquisition and Technology concurred with the Navy's approach to accelerate the F-18 radar upgrade from APG-65 to APG-73 radars in order to provide the resulting excess APG-65 radar assets for the REMAN program. Three of the six basic components that make up the APG-65 radar system are common to the F-18's APG-73 radar and will remain in use in the F-18 aircraft. The remaining three components (the radar receiver/exciter, target data processor, and computer power supply) will become excess assets available to the REMAN program.

In a 1995 classified report, we noted that the APG-73 radar had problems that needed to be resolved before entering the production phase. Responding to our report, DOD said that a procurement decision would be made sometime in 1996, after an operational evaluation of the system is completed. If problems continue and the APG-65 components are not available to the AV-8B REMAN program as planned, it is possible the program could be delayed. If the assets are not available at all, the AV-8B program office would then have to procure all new radar components. Program officials told us the assets would be provided by the F-18 program as planned either from spares stock or from F-18 fleet assets. They also mentioned the possibility that an older, less capable version of the APG-65 radar could be tested and used, if necessary.

According to program officials, the 150-series APG-65 radar is the version required by the AV-8B aircraft. One of these officials also told us that the schedule for removal of the 150-series APG-65 radar assets from the F-18 aircraft is not in sync with the requirements of the AV-8B remanufacture program for radar assets. The AV-8B REMAN program will need radar assets before their scheduled removal from F-18 aircraft. Not only is the removal of radar assets from F-18s a schedule risk to the AV-8B program, the program officials stated that there is also a shortage of 17 sets for the remanufacture program. To compensate for this shortfall, the Navy is modifying 17 of the older 140-series APG-65 radar assets to 150-series configuration to meet REMAN schedule requirements. This work-around is being funded with monies from the AV-8B remanufacture and other Navy programs.

In our discussions with contractor personnel about the impact of possible delays, we were told that if the radar components, which are to be

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furnished by the government, are not made available to the contractor on schedule, the aircraft could be provisionally delivered without radar. If this is the case, the aircraft would not be mission capable until the radar sets were made available. Under a new production strategy, the contractor would be responsible for providing new radar, mitigating this risk.

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## Recommendation

In light of the availability of a more cost-effective strategy to buy new radar AV-8B aircraft, instead of modifying the day attack AV-8B, we recommend that you direct the Secretary of the Navy to develop a current cost estimate for producing new radar model aircraft and (1) revise the acquisition strategy for acquiring upgraded AV-8B aircraft for the Marine Corps so that after the existing annual contract expires, the Marine Corps acquires new radar models rather than remanufactured models and (2) take advantage of the savings available through multiyear procurement.

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## Agency Comments and Our Evaluation

In commenting on a draft of this report, DOD agreed that a multiyear procurement strategy is generally preferable and advantageous, but only partially concurred with our recommendation that the Navy be required to take advantage of savings available through multiyear procurement. DOD stated that it is policy to reevaluate program acquisition strategies as changes in fiscal resources or operational requirements justify. We believe that since the radar model AV-8B aircraft is a valid and stable Marine Corps requirement, now is the appropriate time for the Navy to take advantage of savings that could be realized through multiyear procurement.

DOD disagreed with our recommendation to require the Secretary of the Navy to revise the acquisition strategy for acquiring upgraded AV-8B aircraft so that after the existing annual contract expires, the Marine Corps acquires new radar model aircraft rather than remanufactured aircraft. DOD based its disagreement on current fiscal constraints and cost analyses performed by the Naval Air Systems Command and the Office of the Secretary of Defense's Cost Analysis Improvement Group prior to the 1994 Milestone IV Defense Acquisition Board Review. According to DOD, these analyses, which projected that it would cost \$29.7 million per aircraft to produce a new radar model AV-8B, confirmed that the REMAN program is the more cost-effective way to upgrade the AV-8B fleet.

The information the Naval Air Systems Command and the Cost Analysis Improvement Group used in comparing the costs of the REMAN program with continued or new production is based on out-of-date historical cost data from the procurement of night attack model AV-8B aircraft that were last procured in fiscal year 1990. On the basis of those data, which were the best available at the time the REMAN program was considered, remanufacture of current assets might have been the best solution to modernize the AV-8B fleet. However, new data, based on the procurement of new radar model AV-8Bs, are now available. We used those data to arrive at our \$23.6-million estimate for producing a new radar model AV-8B. During a meeting with DOD officials to discuss their comments on a draft of this report, DOD did not disagree with our methodology. Therefore, in our view, the data we used provides a more accurate cost indicator than an estimate of the night attack AV-8B aircraft modified for radar because our data come from actual procurement of radar model AV-8B aircraft.

DOD also stated in its comments that the REMAN program will provide aircraft with the same operational capabilities that new production provides. This is an inaccurate characterization of the operational capabilities that will be provided under the REMAN program. In fact, aircraft to be produced under the REMAN program will have less operational capability because they will have less weapon-carrying capacity than the radar model AV-8B aircraft procured in fiscal year 1991. Specifically, because the REMAN aircraft will have reused wings from the day attack model aircraft, these aircraft will have only five external weapon stations, whereas the new production radar models have seven external stations.

DOD's comments are presented in their entirety in appendix I.

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## Scope and Methodology

We obtained information on the project contract and management of the AV-8B Harrier Program by reviewing program documentation and interviewing officials at the following DOD locations:

- U.S. Navy Headquarters, Washington, D.C.;
- U.S. Marine Headquarters, Arlington, Virginia;
- Office of the Chief of Naval Operations, Washington, D.C.;
- AV-8B Program Office, Crystal City, Virginia; and
- Naval Aviation Depot, Cherry Point, North Carolina.

We also visited contractor facilities at McDonnell Douglas Aircraft Division in St. Louis, Missouri.

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We conducted our review between October 1994 and November 1995 in accordance with generally accepted government auditing standards.

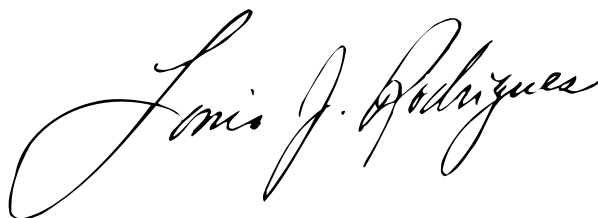
This report contains recommendations to you. The head of a federal agency is required under 31 U.S.C. 720 to submit a written statement on actions taken on our recommendations to the Senate Committee on Government Affairs and the House Committee on Government Reform and Oversight no later than 60 days after the date of the report and to the Senate and House Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

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We are sending copies of this report to appropriate congressional committees; the Secretary of the Navy; the Commandant of the Marine Corps; and the Director, Office of Management and Budget. We will also make copies available to others on request.

Please contact me at (202) 512-4841 if you or your staff have any questions concerning this report. Major contributors to this report were Steven F. Kuhta, Assistant Director; Samuel N. Cox, Evaluator-in-Charge; and Brian Mullins, Evaluator.

Sincerely yours,

A handwritten signature in black ink that reads "Louis J. Rodrigues". The signature is written in a cursive style with a large, looping initial "L".

Louis J. Rodrigues  
Director, Defense Acquisition Issues

# Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



ACQUISITION AND TECHNOLOGY

## OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON DC 20301-3000



20 DEC 1995

Mr. Louis J. Rodrigues  
Director, Systems Development  
and Production Issues  
National Security and International  
Affairs Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Rodrigues:

This is the Department of Defense (DOD) response to the General Accounting Office (GAO) draft report, "NAVY AVIATION: AV-8B Remanufacture Strategy is not the Most Cost-Effective Option," dated November 30, 1995 (GAO code 707096), OSD Case 1058. The Department partially concurs with the contents of the report and agrees that a multi-year procurement strategy is generally preferable and advantageous. However, given current fiscal constraints and analysis summarized below, the Department does not concur with the recommendation to revise its current acquisition strategy and begin immediate negotiations to buy new radar models at this time.

Lessons learned from Desert Storm confirm that the ability to be successful in today's threat environment requires the Marine Air-Ground Task Force (MAGTF) to be capable of conducting operations during periods of darkness and adverse weather. As an integral part of the MAGTF, Marine Aviation will provide offensive air support when required, regardless of environmental or meteorological conditions. The AV-8B (radar/night attack aircraft), conceived as a capability enhancement to the AV-8B day and night attack aircraft, provides Marine Aviation with this capability. The AV-8B (radar/night attack aircraft) gives the United States Marine Corps a more lethal, survivable, and reliable AV-8B aircraft. The AV-8B Remanufacture program provides the same more capable aircraft, in a more cost-effective manner, without increasing aircraft inventory.

Prior to the AV-8B Milestone IV review in March 1994, Naval Air Systems Command and OSD Cost Analysis Improvement Group (CAIG) cost analyses compared the relative costs of Remanufacture and continued or "new" production. Consistently, the "New vs. Remanufacture" comparisons confirmed the best solution to modernize the fleet is the remanufacture of current assets.

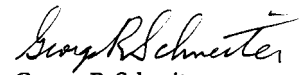


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**Appendix I**  
**Comments From the Department of Defense**

Detailed DOD comments on each recommendation are provided in the enclosure. The Department appreciates the opportunity to comment on the draft report.

Sincerely,



George R. Schneiter  
Director  
Strategic and Tactical Systems

Enclosure

GAO DRAFT REPORT - DATED NOVEMBER 30, 1995  
(GAO CODE 707096) OSD CASE 1058

"NAVY AVIATION: AV-8B REMANUFACTURE STRATEGY IS NOT THE MOST  
COST-EFFECTIVE OPTION"

DEPARTMENT OF DEFENSE COMMENTS

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RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to revise the acquisition strategy for acquiring upgraded AV-8B aircraft for the Marine Corps so that after the existing annual contract expires, the Marine Corps acquires new radar models.

**DOD RESPONSE:** Nonconcur. Various Naval Air Systems Command and OSD Cost Analysis Improvement Group cost studies compared the relative costs of Remanufacture and continued or "new" production. Consistently, analyses of comparable "New versus Remanufacture" scenarios confirm the cost-effective way to upgrade fleet capability is to remanufacture current assets. According to Annex B of the AV-8B Integrated Program Summary for Milestone IV DAB review, average flyaway cost (\$ Constant FY 1994) for new procurement is \$29.7M, versus \$22.0M for Remanufacture. Total life cycle costs from FY 1994 - FY 2016 for new production are \$9,332.3M versus \$8,787.7M for Remanufacture. The GAO report does not consider the fact that FY 1991 procurement was the last year of a three-year, 72-aircraft multi-year buy. The last year of any multi-year acquisition program is by far the most efficient. The GAO applies an additional multi-year cost savings factor to an existing multi-year acquisition; therefore, the GAO cost profile has multi-year cost savings applied twice. The Department concurs that a multi-year procurement strategy is generally the most cost-effective means of aircraft procurement; however, multi-year procurement as a strategy to reduce recurring unit cost could be applied to remanufacture as well as new procurement. Therefore, in a relative sense, it does not make new production any more advantageous than remanufacture.

**RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to take advantage of the savings available through a multi-year procurement.

**DOD RESPONSE:** Partially concur. The Department, as a matter of policy, reevaluates program acquisition strategies as changes in fiscal resources and/or operational requirements justify.

See comment 1.



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The following is GAO's comment on the Department of Defense's (DOD) letter dated December 20, 1995.

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## **GAO Comment**

1. According to DOD's response to a draft of this report, the radar model aircraft procured in 1991, that we used as our basis for comparing Remanufacture Program (REMAN) and new production cost, was the last year of a 3-year multiyear procurement buy. We determined that multiyear procurement for the 1991 buy was applicable only to the airframe. Therefore, we recalculated our estimate so as not to apply a multiyear cost saving factor for the airframe. This recalculation increased our estimate for new aircraft procurement but did not cause us to change our conclusions and recommendation in the final report. Our adjusted estimate is reflected in the body of the report.

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