Audit Report

OFFICE OF THE INSPECTOR GENERAL

AV-8B REMANUFACTURE PROGRAM AS PART OF THE AUDIT OF THE DEFENSE ACQUISITION BOARD REVIEW PROCESS - FY 1994

Report No. 94-118 June 3, 1994

Department of Defense

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Acronyms

APN-1	Aircraft Procurement, Navy
DAB	Defense Acquisition Board
USD(A&T)	Under Secretary of Defense for Acquisition and Technology
V/STOL	Vertical/Short Take-off and Landing

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

June 3, 1994

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY
ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH DEVELOPMENT AND ACQUISITION

SUBJECT: Audit Report on the AV-8B Remanufacture Program as Part of the Audit of the Defense Acquisition Board Review Process - FY 1994 (Report No. 94-118)

We are providing this audit report for your review and comments. This report addresses the adequacy of information the Navy provided to the Defense Acquisition Board to support the Milestone IV, Major Modification Approval, review for the AV-8B Remanufacture Program. Comments on a draft of this report were considered in preparing the final report.

Comments on the draft of this report from the Under Secretary of Defense for Acquisition and Technology partially concurred with the recommendation. His comments will meet the intent of the recommendation if the Navy elects to pursue multiyear procurement for the AV-8B Remanufacture Program. We revised and redirected our recommendation to require the Assistant Secretary of the Navy for Research, Development, and Acquisition to address the time frames and approach for initiating multiyear procurement and potential monetary benefits. DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, comments should be provided by August 2, 1994. No additional comments are required from the Under Secretary of Defense for Acquisition and Technology.

We appreciate the courtesies extended to the audit staff. If you have any questions on this audit, please contact Mr. Brian Flynn, Acting Program Director, at (703) 693-0186 (DSN 223-0186) or Mr. Harold C. James, Project Manager, at (703) 614-3974 (DSN 224-3974). Appendix D lists the distribution of this report. The audit team members are listed inside the back cover.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 94-118 **June 3, 1994**
(Project No. 3AE-0063.03)

THE AV-8B REMANUFACTURE PROGRAM AS PART OF THE AUDIT OF THE DEFENSE ACQUISITION BOARD REVIEW - FY 1994

EXECUTIVE SUMMARY

Introduction. The AV-8B Harrier II (AV-8B) is a vertical/short take-off and landing tactical jet aircraft designed primarily to provide close air support for ground operations. The AV-8B is flown exclusively by the Marine Corps. Four variants of the AV-8B have been produced: the day attack version, the night attack version, the trainer version, and, most recently, the night attack plus radar version, which is known as the Harrier II Plus. The Navy, which has program management responsibility for the AV-8B program, plans to upgrade 73 of the day attack aircraft to the Harrier II Plus configuration through remanufacture at an estimated cost of $1.8 billion. The remanufacture effort is planned to begin in FY 1994. The initial remanufacture rate is planned at four AV-8B aircraft per year in FYs 1994 and 1995. Increased remanufacture rates are planned for FYs 1996 through 2000.

Objectives. The overall objective was to evaluate the Defense Acquisition Board review process for the acquisition of the remanufactured AV-8B aircraft. Specifically, we assessed the adequacy of documentation the Navy provided to the Defense Acquisition Board in support of the Milestone IV, Major Modification Approval, review for the AV-8B Remanufacture Program. We also evaluated internal controls related to the objective.

Audit Results. The required documentation the Navy submitted to the Defense Acquisition Board was well prepared. However, the Navy's proposed acquisition strategy for the AV-8B Remanufacture Program did not include specific plans to use multiyear procurement for acquisition of 58 remanufactured aircraft during FYs 1997 through 2000. While Navy analysis has shown that savings of $553 million are achievable through remanufacture, the Navy risks loss of additional potential savings from applying multiyear procurement to the remanufacture of AV-8B airframes and engines.

Internal Controls. The audit did not identify any material internal control weaknesses. The audit concluded that existing internal controls, if properly implemented, were adequate. See Part I of this report for the internal controls assessed.

Potential Benefits of Audit. Implementing the recommendation in this report will result in the timely planning and application of multiyear procurement to the acquisition of remanufactured AV-8B aircraft. Use of multiyear procurement could result in approximately $123.0 million in Aircraft Procurement, Navy, funds being put to better use on the remanufacture of AV-8B airframes. Additionally, approximately $33.7 million in Aircraft Procurement, Navy, funds could be put to better use through application of multiyear procurement for the acquisition of F402-RR-408A engines. See Appendix A for the computation method and Appendix B for the summary of potential monetary benefits.

Summary of Recommendation. We recommended the use of multiyear procurement for the airframe and engine contracts planned for FYs 1997 through 2000.

Management Comments. Management comments to the draft report were provided for the Under Secretary of Defense for Acquisition and Technology by the Director, Acquisition Program Integration. The Director partially concurred with our finding and recommendation. He stated that the Navy had indicated concern about the level of potential savings (monetary benefits) achievable from use of multiyear procurement for the AV-8B Remanufacture Program. A full discussion of management comments and the audit response is in Part II, and the complete text of the Director's comments as well as additional comments submitted by the Office of the Assistant Secretary of the Navy for Research, Development, and Acquisition are in Part IV of this report. We redirected our recommendation so that the Assistant Secretary of the Navy for Research, Development, and Acquisition is required to comment rather than the Under Secretary of Defense for Acquisition and Technology. Additionally, we revised our recommendation to address use of multiyear procurement for the AV-8B Remanufacture Program as part of Navy's budget submission process rather than in the Acquisition Decision Memorandum resulting from the Defense Acquisition Board Milestone IV for the program. We also revised our computation of monetary benefits to reflect use of multiyear procurement in FYs 1997 through 2000 in lieu of FYs 1996 through 2000. We request that the Assistant Secretary provide comments to the final report by August 2, 1994.

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Part I - Introduction

Background

AV-8B Harrier II Program. The AV-8B Harrier II (AV-8B) is a vertical/short take-off and landing (V/STOL) tactical jet aircraft designed primarily to provide close air support for ground operations. The aircraft is flown exclusively by the Marine Corps. Since 1983, the Marine Corps has replaced its AV-8A models with the AV-8B model. Four variants of the AV-8B have been produced: the day attack version; the night attack with a forward-looking infrared sensor version; the trainer version; and most recently, the night attack plus radar version, which is known as the Harrier II Plus. Development and production of the Harrier II Plus began in FY 1990 through a cooperative program with the governments of Spain and Italy. The Navy Program Executive Officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs has overall acquisition program management responsibility for the AV-8B program. A program manager for the AV-8B Remanufacture Program has been assigned from the Marine Corps to the Navy Attack Vertical/Take-Off Weapons System Program Management Office.

Harrier II Plus Characteristics. The Harrier II Plus has increased radar and engine capabilities and meets the Navy requirements of Operational Requirement Document, OR-224-05-89, August 1988, which sets forth the need for a multimode radar in the AV-8B to provide:

- enhanced attack capabilities under day and night conditions of marginal visibility,
- new air-to-ground targeting capability beyond visual range,
- enhanced navigation and escort capability, and
- growth potential for incorporation of advanced weapons.

The Harrier II Plus also provides increased maneuverability and improved defensive capabilities. The F402-RR-408A (408A) engine, an upgrade to the F402-RR-406A (406A) engine used on previous configurations, provides increased thrust.

Harrier II Plus Contracts. A total of 27 Harrier II Plus aircraft have been purchased under two contracts with McDonnell Douglas Aerospace Company (McDonnell Douglas). The first Marine Corps buy of 21 Harrier II Plus aircraft was made under the FY 1991 option of the multiyear contract N00019-88-C-0001. The second buy of six aircraft was under contract N00019-92-C-0003. Both contracts were firm-fixed price.

At the conclusion of planned new production deliveries of the Harrier II Plus in November 1994, more than 50 percent of the Harrier fleet will still be in the day attack configuration. The day attack variant of the AV-8B lacks the capabilities identified as essential during Operation Desert Storm such as night operations capability, increased chaff and flare capacity, increased engine thrust, enhanced maneuverability, and multimode radar.

Remanufacture Effort. The Navy plans to upgrade the day attack version to the Harrier II Plus version by contracting with McDonnell Douglas, which produces the AV-8B airframe, and Rolls Royce, Military Engine Group (Rolls Royce), which produces the 408A engine, to remanufacture 73 day attack aircraft into the Harrier II Plus configuration at an estimated cost of $1.8 billion. The British Aerospace Corporation is the primary subcontractor to McDonnell Douglas on the aircraft remanufacture program. The initial remanufacture rate is planned at four aircraft per year in FYs 1994 and 1995. Increased remanufacture rates are planned for FYs 1996 through 2000.

Objectives

The overall audit objective was to evaluate the Defense Acquisition Board (DAB) review process for the acquisition of AV-8B remanufactured aircraft. Specifically, we assessed the adequacy of the documentation the Navy provided to the DAB in support of the Milestone IV, Major Modification Approval, (Milestone IV) review for the AV-8B Remanufacture Program. We also reviewed applicable internal controls.

Scope and Methodology

We performed this program audit in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of internal controls as were deemed necessary. We performed the audit from November 1993 through February 1994 and reviewed DAB documents and other data dated from May 1988 through February 1994. We discussed issues related to the DAB review with Navy and Office of the Secretary of Defense personnel responsible for the preparation and review of DAB documents. We also discussed remanufacture and production issues with contractor personnel at McDonnell Douglas and with personnel at the Naval Aviation Depot, Cherry Point, North Carolina. The audit did not place material reliance on the evaluation of computer-generated data to support the finding and recommendation. Appendix C lists organizations visited or contacted.

Internal Controls

We assessed the adequacy of internal controls related to management of the AV-8B Remanufacture Program. Internal control procedures are specified in DoD Directive 5000.1, "Defense Acquisition," February 23, 1991, and DoD

Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991. The audit did not identify any material internal control weaknesses as defined by DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987. Existing internal controls, if implemented, are adequate to provide for consideration of multiyear procurement in program acquisition strategies. A copy of the report will be provided to senior officials responsible for internal controls in the Office of the Secretary of Defense and the Department of the Navy.

Prior Audits and Other Reviews

Since 1989, the General Accounting Office; the Inspector General, DoD; and the Naval Audit Service each issued one report on the AV-8B. We did not follow-up on those prior audits because the reports did not discuss issues directly related to the AV-8B Remanufacture Program.

Part II - Finding and Recommendation

Multiyear Procurement for the AV-8B Remanufacture Program

The required documentation the Navy submitted to the Defense Acquisition Board was well prepared. However, the proposed acquisition strategy for the AV-8B Remanufacture Program did not include specific plans to use multiyear procurement for the acquisition of 58 remanufactured aircraft during FYs 1997 through 2000. This situation occurred because program management effort in support of the Milestone IV, Major Modification Approval, review scheduled for March 1994 had been focused on demonstrating to the Under Secretary of Defense for Acquisition and Technology (USD[A&T]) that remanufacture of existing aircraft is a more cost-effective means of meeting mission needs than new production. While Navy analysis showed that savings of $553 million are achievable through remanufacture, the Navy risks losing an additional potential savings of as much as $123.0 million and $33.7 million from applying multiyear procurement to the remanufacture of AV-8B airframes and the production of new 408A engines, respectively.

Background

Multiyear Procurement. Multiyear procurement involves contracting for more than the current year requirement. Multiyear contracts, as defined by Federal Acquisition Regulation, subpart 17.1, "Multiyear Contracting," are contracts covering more than 1 year but not in excess of 5 years' requirements, unless otherwise authorized by statute. Under multiyear contracting, total contract quantities and annual quantities are planned for a particular level and type of funding as displayed in a current 5-year development plan. Each program year is annually budgeted and funded. At the time of award, funds need only be appropriated for the first year.

Multiyear contracting applies to both new production and remanufacture alternatives. Multiyear procurement is encouraged in the Final Report to the President by the President's Blue Ribbon Commission on Defense Management in June 1986. This report cited use of multiyear procurement as a way to enhance program stability and promote lower unit prices.

Establishment of the AV-8B Remanufacture Program. The Navy decided to establish a funded remanufacture program for AV-8B aircraft as a result of an October 1992 briefing by the Marine Corps Department of Aviation to the then-Acting Secretary of the Navy concerning Marine Corps V/STOL requirements. The briefing stated that the Marine Corps had sufficient numbers of AV-8Bs but that the day attack version of the AV-8B aircraft needed to be upgraded to the Harrier II Plus configuration for the Marine Corps' V/STOL force to be more effective.

AV-8B Remanufacture Program Implementation. Under the remanufacture concept, the Naval Aviation Depot, Cherry Point, North Carolina, will disassemble the day attack version of the AV-8B to the extent necessary to remove all components that will be reused in remanufacture. Naval Aviation Depot personnel will test, repair, and modify as necessary the reusable components. The components will then be shipped to McDonnell Douglas where they will be joined with new material, including 408A engines to be purchased under a separate contract with Rolls Royce, to form the Harrier II Plus configuration. The Navy and Marine Corps identified remanufacture as the path to upgrade Marine Corps V/STOL capability without an increased inventory and at the lowest procurement cost. Operating and support costs are considered similar for both the new production and remanufacture alternatives.

Implementing Multiyear Procurement

Multiyear Procurement in the AV-8B Acquisition Strategy. The AV-8B acquisition strategy in the DAB documentation we reviewed did not include definitive plans to implement multiyear procurement for the remanufactured aircraft. The Navy Program Executive Officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs signed the acquisition strategy contained in Acquisition Plan No. AIR-93-26A, "AV-8B Remanufacture," on September 17, 1993, after the Defense Acquisition Executive approved the Acquisition Strategy Report on September 17, 1993. Acquisition Plan No. AIR-93-26A is unclear concerning whether and how multiyear procurement will be used for remanufacture. Section 4 of the acquisition plan, which discusses program milestones, states that a single contract can address the planned remanufacture of four aircraft per year in FYs 1994 and 1995. The section further states that a follow-on contract for FY 1996 can address potential multiyear requirements for quantity savings. However, section 8, which discusses the plan of action for proposed contracts, contains a schedule showing the award of a single-year contract each year for FYs 1996 through 2000. Additionally, the acquisition plan does not mention possible multiyear procurement of the AV-8B aircraft engine.

Future Use of Multiyear Procurement. In addition to the uncertainty in the acquisition plan regarding the use of multiyear procurement, the Navy has not discussed the possibility for the future use of multiyear procurement for AV-8B remanufacture with McDonnell Douglas. The program manager responsible for managing the AV-8B program at McDonnell Douglas stated that, as of February 3, 1994, no inquiries or comparison of costs between single-year procurement and multiyear procurement had been made for the remanufacture program.

Planning Time Needed for Multiyear Procurement. Navy program management personnel have had little time to plan for the use of multiyear procurement in the AV-8B Remanufacture Program. In a June 18, 1993, memorandum to the Secretary of the Navy, the Defense Acquisition Executive directed that, because of the total procurement cost ($1.74 billion) for the

AV-8B remanufacture program, a Milestone IV review should be completed by the DAB "prior to obligating significant funding." Before June 18, 1993, the milestone decision authority for the program had been the Navy Acquisition Executive. Since June 1993, program management effort in support of the DAB Milestone IV review, held in March 1994, had been focused on examining the cost benefits of remanufacture compared with new production.

Requirements for the Milestone IV Review Documentation. In June 1993, the Defense Acquisition Executive advised the Navy Acquisition Executive that the upcoming Milestone IV review should focus on the cost estimates for the remanufacture program and compare the cost of continued production versus remanufacture. Specifically, in the June 1993 memorandum, the Defense Acquisition Executive required Milestone IV documentation that included an "evaluation of alternatives," which examined the potential operational benefits and cost savings from remanufacture. Other documentation requirements included:

- an integrated program summary with annexes on program structure, program life-cycle-cost estimate summary, and acquisition strategy;
- an acquisition program baseline;
- a program life-cycle-cost estimate;
- an independent cost estimate; and
- a test and evaluation master plan update showing critical operational issues, measures of effectiveness, test resources, and schedule.

Milestone IV Documentation. The Program Executive Officer for Air Anti-Submarine Warfare, Assault, and Special Programs completed a draft version of the Milestone IV documentation, "AV-8B Remanufacture Program Evaluation of Alternatives," on December 21, 1993. The review indicated that total procurement costs were $552.8 million less for the remanufacture of 73 aircraft than for new production of AV-8B aircraft. However, the draft evaluation recommended new production of the 408A engines because of significant differences between the 406A-model engine currently in the day attack aircraft and the 408A configuration used for the Harrier II Plus. We examined the Program Executive Officer's evaluation and found it to be timely and complete to support the Milestone IV decision.

Benefits of Multiyear Procurement. Multiyear procurement was used successfully during Phase III, Production and Deployment, to reduce costs of the production of the Harrier II and Harrier II Plus configurations of the AV-8B.

Comparison of Multiyear Contract Prices with Single-Year Contract Price. On March 14, 1988, the Navy issued contract N00019-88-C-0001, a firm-fixed price contract for $878 million, which included the production of 72 AV-8Bs for 3 years, FYs 1989 through 1991. Before the award of this contract, McDonnell Douglas submitted a proposal showing estimated savings

of $118 million, or 12 percent, on a fixed-price contract covering the 3 years as compared with three single-year procurements. Planned new production buys of AV-8Bs ended with the June 3, 1992, award of contract N00019-92-C-0003 for $174 million, which was a single-year firm-fixed price procurement made to replace the six AV-8B aircraft the United States lost in Operation Desert Storm. Delivery will be completed in November 1994. The U.S. Marine Corps has not issued any multiyear procurements of AV-8B engines.

Comparison of Remanufacture Cost Savings with New Production Cost Savings. McDonnell Douglas program management personnel for the AV-8B stated that the use of multiyear procurement for remanufacture would be expected to result in cost saving percentages similar to those experienced with earlier production. McDonnell Douglas personnel stated that while they had not prepared a formal comparison for the remanufacture effort, they would expect savings of as much as 12 percent, compared with annual buys. Applying the 12-percent savings against the $1.0 billion estimated as the McDonnell Douglas portion of the remanufacture program yields potential savings to the Government of approximately $123.0 million in Aircraft Procurement, Navy (APN-1) funds. The estimated savings figure for McDonnell Douglas is based on Navy's planned procurement of 58 AV-8B Harrier II Plus aircraft over the 4-year period, FYs 1997 through 2000. No estimates or prior savings data were available for the 408A engines, which are planned to cost $280.8 million for procurement between FYs 1997 and 2000. Applying the 12-percent savings to the estimated cost of the 408A engines yields additional savings of $33.7 million in APN-1 funds. See Appendix A for details on potential savings.

Requirements for Establishing Multiyear Contracts. The AV-8B Remanufacture Program meets the requirements established in title 10, United States Code, section 2306, for use of multiyear contracts. The code provides that multiyear contracts can be used when:

o the use of such a contract will promote the national security of the United States and will result in reduced total costs under the contract;

o the minimum need for the property to be purchased is expected to remain substantially unchanged during the contemplated contract period in terms of production rate, procurement rate, and total quantities;

o a reasonable expectation exists that, throughout the contemplated contract period, DoD will request funding for the contract at the level required to avoid contract cancellation;

o a stable design exists for the property to be acquired and the technical risks associated with such property are not excessive; and

o estimates of both the cost of the contract and the anticipated cost avoidance through the use of a multiyear contract are realistic.

The AV-8B Remanufacture Program meets all above criteria. Through analysis and evaluation of program plans and documentation relating to the remanufacture program, we determined the following:

o Cost-effective procurement of the remanufactured AV-8B Harrier II Plus aircraft is critical to national security. The USD(A&T) in his June 18, 1993, memorandum to the Secretary of the Navy, which established the need for a Milestone IV DAB review for the AV-8B Remanufacture Program, identified enhanced AV-8B capabilities as a "critical mission area." The AV-8B aircraft is the only jet aircraft in the U.S. operational military aircraft inventory that provides the flexibility of the V/STOL capabilities in the tactical threat environment. The deficiencies of the current AV-8B fleet were identified and fully documented in Operational Requirement Document OR-224-05-89, August 1988, and validated during Operation Desert Storm. The potential cost savings of multiyear procurement were discussed in the Benefits of Multiyear Procurement section.

o The need for the AV-8B Harrier II Plus should remain substantially unchanged through the recommended period of multiyear procurement (FYs 1996 through 2000). Also, adequate funding has been programmed.

o A stable design exists for the aircraft, and the technical risks for the remanufacture program are low. The acquisition plan, "AV-8B Remanufacture," states that remanufactured aircraft will be procured to the same detail specification as that of the FY 1992 new production AV-8B aircraft. The acquisition plan rates technical risk as very low because full production began in September 1985 and has been ongoing since then. Additionally, the Navy and McDonnell Douglas will have the experience from the FYs 1994 through 1996 "low-rate" buys of remanufactured AV-8B aircraft to further reduce remaining risk associated with the remanufacture before starting multiyear procurement at increased production rates. The table below shows the Navy's planned buy of remanufactured AV-8B aircraft for FYs 1994 through 2000.

AV-8B Remanufacture Program Planned Buy

Fiscal Year	Planned Buy
1994	4
1995	4
1996	7
1997	12
1998	13
1999	18
2000	15
Total	73

Implementation of multiyear procurement in FY 1997 will also allow the details of the remanufacture process (a joint effort between the Navy Aviation Depot, Cherry Point, and McDonnell Douglas) to be worked out in FYs 1994 through 1996.

o Estimates of the cost of the multiyear contract and the anticipated cost savings are computable in a realistic manner due to the production experience that already exists for the AV-8B aircraft and the prior use of multiyear procurement for essentially the same aircraft.

The provisions of title 10, United States Code, section 2306, are implemented in DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991. The Instruction states that program acquisition strategies should be tailored to match the character of the program and allow the most efficient satisfaction of individual program requirements. The Instruction further states that, commensurate with risk and affordability, multiyear procurement is among the alternatives that should be considered.

Need for Timely Action. Timely and decisive action by the Navy is required to incorporate multiyear procurement into the AV-8B acquisition strategy to provide savings over the final 4 years (FYs 1997 through 2000) of the remanufacture program. The need for prompt action is based on the time necessary to prepare and submit multiyear procurement certification to Congress and to obtain the necessary congressional approval to award the multiyear contract. The procedures necessary to obtain the required congressional approval are provided in DoD Instruction 5000.2 and DoD 7000.14-R, "Financial Management Regulation," June 1993. The Navy program manager must prepare the multiyear procurement certification and submit the certification to the Comptroller of the Department of Defense, along with the multiyear procurement exhibits required as part of the budget estimate submission. The Comptroller of the Department of Defense then uses this information to prepare the multiyear procurement certification for submission to Congress by the USD(A&T), as delegated by the Secretary of Defense.

Requirements of Multiyear Procurement Exhibits. The multiyear procurement exhibits require the Navy to develop detailed benefit and risk analysis information that considers potential for cost savings; stability of requirements, funding, and system configuration; cost confidence; and contractor capability. In addition, the Navy must prepare exhibits comparing the use of annual contracts with the multiyear alternative with respect to costs, funding profiles, total annual obligation authority required, savings and cost avoidance, and present value analysis. The Navy must also prepare an exhibit showing the impact of a multiyear program on the industrial base. Because the exhibits the Navy is required to include in its FY 1996 budget estimate are complex and extensive, timely action to implement multiyear procurement is imperative.

Conclusion

The AV-8B Remanufacture Program is an excellent candidate for achieving significant cost savings through implementation of multiyear procurement for airframe and engine buys occurring from FYs 1997 through 2000. The airframe and the engine are viable multiyear procurement candidates because of the planned stability in need, design, and funding, and the low amount of technical risk. The Navy should address multiyear procurement for the AV-8B during the preparation of the FY 1996 budget submission. This prompt management attention is warranted due to the critical nature of the AV-8B mission, the potential for significant cost savings, and the time and effort required to plan and implement multiyear procurement as part of the FY 1996 budget.

Recommendation, Management Comments, and Audit Response

We recommend that the Assistant Secretary of the Navy for Research, Development, and Acquisition prepare and submit, as part of the Navy's FY 1996 budget submission, multiyear procurement certification for the AV-8B Remanufacture Program airframe and engine buys planned for FYs 1997 through 2000. Preparation and submission of the multiyear procurement certification should conform to guidance in DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 1991, and DoD 7000.14-R, "Financial Management Regulation," June 1993.

Office of the Secretary of Defense Comments. The draft report recommendation was addressed to the Under Secretary of Defense for Acquisition and Technology. Based upon responses to the draft, we revised and redirected the recommendation in the final report. The Director, Acquisition Program Integration, responded for the Under Secretary of Defense for Acquisition and Technology. The Director stated that he partially concurred with the finding and the recommendation. The Director agreed that the Acquisition Strategy Report for the AV-8B Remanufacture Program did not include definitive plans for multiyear procurement for the airframe or the engine. He stated that our draft report recommendation to include multiyear procurement in the Acquisition Decision Memorandum, issued after the Defense Acquisition Board Milestone IV, was not implemented. However, the Director also stated that it would be entirely appropriate for the Navy to consider multiyear procurement as the Navy prepares its FY 1996 budget submission and indicated that OSD would then evaluate any multiyear proposal based on achievability of savings and impact on resource flexibility. The Director further stated that the earliest that multiyear procurement could be implemented would be FY 1997, which would require advance procurement funding in FY 1996. Finally, the Director referenced comments provided for the Assistant Secretary

of the Navy for Research, Development, and Acquisition in stating that the Navy indicated concern about the level of potential savings (monetary benefits) achievable from use of multiyear procurement for the AV-8B Remanufacture Program. The complete text of management comments is in Part IV.

Navy Comments. The Deputy Assistant Secretary of the Navy for Air Warfare responded for the Assistant Secretary of the Navy for Research, Development, and Acquisition. The Deputy Assistant Secretary concurred with the finding, stating that multiyear procurement for the AV-8B Remanufacture Program was not addressed in the Acquisition Strategy Report and that potential savings could accrue through use of multiyear procurement. The Deputy Assistant Secretary nonconcurred with the monetary benefits claimed as a result of the 12-percent savings estimate postulated in the draft report. He stated that savings during the last multiyear AV-8B procurement were close to 8 percent and that it will be very difficult to achieve 12-percent savings unless procurement quantities increase substantially. The Deputy Assistant Secretary also stated that it would not be feasible to initiate multiyear procurement before FY 1997. Initiation of multiyear procurement in FY 1996, as recommended in the draft report, was not feasible because the necessary funding increase for advance procurement in FY 1995 as well as specific identification of the funding required for a multiyear procurement beginning in FY 1996 was not part of the FY 1995 budget requirements submitted to Congress. Additionally, the Deputy Assistant Secretary stated that risk will be added to the overall cost for the remanufacture program because of the low production rate and the extensive requirement for Government-furnished material. He further indicated that, until actual costs have been accumulated for the remanufacture effort, it will be difficult to accurately estimate the costs of potential multiyear contracts. The complete text of management comments is in Part IV.

Audit Response. Based on the management comments to the draft report, we have revised and redirected the recommendation. The recommendation is revised to state that initiation of multiyear procurement for the AV-8B Remanufacture Program should be accomplished through the Navy's budget submission process. Our draft report had recommended that multiyear procurement be addressed in the Acquisition Decision Memorandum resulting from the planned Defense Acquisition Board Milestone IV Review. The Acquisition Decision Memorandum, issued March 11, 1994, as a result of the Milestone IV Review held on the same day, approved Milestone IV for the AV-8B Remanufacture Program and authorized the use of long-lead procurement but was silent with regard to the use of multiyear procurement. Additionally, we changed the recommended start of multiyear procurement from FY 1996 to FY 1997 in recognition of the lead time required to build multiyear procurement into the Navy budget. The recommendation is redirected to the Assistant Secretary of the Navy for Research, Development, and Acquisition in lieu of the Under Secretary of Defense for Acquisition and Technology. This redirection was based on the comments of the Director, Acquisition Program Integration. The Director's comments indicate that the Under Secretary of Defense for Acquisition and Technology is willing to consider multiyear procurement for the AV-8B program if the Navy elects, through its budget submission process, to pursue the multiyear option.

We have not changed the monetary benefits estimated by using a 12-percent savings figure. In the finding we state that "savings of as much as 12 percent" could be realized through multiyear procurement, compared with annual buys. This figure, as explained in the finding, is an estimate obtained from program management personnel at McDonnell Douglas Aerospace-East, based on their experience with the last AV-8B multiyear procurement and with knowledge of the planned production profile for the remanufactured aircraft. With regard to the lower savings (8 percent) realized on the previous multiyear procurement, the contractor personnel stated that savings on that procurement were diminished as a result of a production line disruption that impeded AV-8B production. We agree that it is difficult to estimate the cost savings from use of multiyear contracts until the contracts are awarded. Actual savings will not be known until performance is complete. We plan to rely on the audit followup process to more accurately assess the estimated savings at the time of contract award. We have revised our finding and computation of potential monetary benefits to reflect estimated savings from the use of multiyear procurement in FYs 1997 through 2000 in lieu of FYs 1996 through 2000.

Part III - Additional Information

Appendix A. Computation of Potential Monetary Benefits

FY for APN-1 Funds	Airframe Cost[1] (in millions)	Savings Factor (percent)	Potential Savings[2] (in millions)
1997	$ 213.5	12	$ 25.6
1998	232.0	12	27.8
1999	310.3	12	37.2
2000	270.3	12	32.4
Total Potential Savings	$1,026.1		$123.0

FY for APN-1 Funds	408A Engine Costs[3] (millions)	Savings Factor (percent)	Potential Savings[2] (millions)
1997	$ 58.4	12	$ 7.0
1998	64.5	12	7.8
1999	89.3	12	10.7
2000	68.6	12	8.2
Total Potential Savings	$280.8		$33.7

[1]Projected costs for airframe and associated contractor-furnished equipment to be supplied by McDonnell Douglas through a contract with the Navy.

[2]Potential savings are based on the computations of projected airframe and engine and accessory costs multiplied by a 12-percent savings factor and assumed APN-1 funding will be provided for FY 2000. These projected costs were used by the DoD Cost Analysis Improvement Group in its analysis of total program costs for the DAB Milestone IV Review meeting. The savings factor is based on the multiyear contract (N00019-88-C-0001) between the Navy and McDonnell Douglas for the procurement of 72 new AV-8B aircraft during FYs 1989 through 1991.

[3]Projected costs for engine and engine accessories to be supplied to McDonnell Douglas by the Navy through a separate contract between Rolls Royce, Military Engine Group, and the Navy.

Appendix B. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.	Economy and Efficiency. Will achieve significant savings over the use of annual contracts.	APN-1 funds put to better use for FYs 1997 through 2000 of up to $123.0 million for AV-8B airframes and $33.7 million for 408A engines. Exact savings can be determined after multiyear procurement agreements are made.

Appendix C. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology, Washington, DC
Comptroller of the Department of Defense, Washington, DC
Director, Program Analysis and Evaluation, Washington DC
Principal Deputy Assistant Secretary of Defense (Production and Logistics), Office of the Assistant Secretary of Defense for Economic Security, Washington, DC

Department of the Navy

Assistant Secretary of the Navy (Research, Development, and Acquisition), Washington, DC
Headquarters, Naval Air Systems Command, Arlington, VA
- Program Executive Officer, Air Anti-Submarine Warfare, Assault and Special Mission Programs, Arlington, VA
- AV-8B Program Office, Arlington, VA

Naval Center for Cost Analysis, Arlington, VA
Naval Aviation Depot, Cherry Point, NC
Deputy Chief of Staff for Aviation, U.S. Marine Corps, Arlington, VA

Defense Agencies

Defense Logistics Agency, Alexandria, VA
Defense Plant Representative Office, McDonnell Douglas Aerospace-East, St. Louis, MO

Non-Government Organization

McDonnell Douglas Aerospace-East, St. Louis, MO

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
Comptroller of the Department of Defense
Assistant to the Secretary of Defense for Public Affairs

Department of the Navy

Secretary of the Navy
Commandant of the Marine Corps
Assistant Secretary of the Navy (Financial Management)
Assistant Secretary of the Navy (Research, Development, and Acquisition)
Comptroller of the Navy
Program Executive Officer, Air Anti-Submarine Warfare, Assault, and Special Mission Programs
Program Manager, AV-8B Aircraft
Assistant Commander for Contracts, Naval Air Systems Command
Commanding Officer, Naval Aviation Depot, Cherry Point
Deputy Chief of Staff for Aviation, U.S. Marine Corps
Auditor General, Naval Audit Service

Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Inspector General, Defense Intelligence Agency
Inspector General, National Security Agency
Director, Defense Logistics Studies Information Exchange
Commander, Defense Plant Representative Office, McDonnell Douglas Aerospace-East

Non-Defense Federal Organizations

Office of Management and Budget
U.S. General Accounting Office, National Security and International Affairs Division, Technical Information Center
Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs

Non-Defense Federal Organizations (continued)

House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
House Subcommittee on Legislation and National Security, Committee on Government Operations

Part IV - Management Comments

Office of the Secretary of Defense
Department of the Navy

Office of the Secretary of Defense Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

ACQUISITION AND TECHNOLOGY

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: Draft Audit Report on the AV-8B Remanufacture Program as Part of the Audit of the Defense Acquisition Board Review Process - FY 1994 (Project No. 3AE-0063.03)

We have reviewed the Draft Report, and partially concur with the one finding and recommendation cited in the report. Specifically, the draft report noted that the AV-8B Remanufacture Program Acquisition Strategy Report (ASR) did not include definitive plans to implement multi-year procurement for the airframe nor the engine. While the ASR may not have included definitive plans, the ASR did identify that a follow-on contract for FY 1996 could address potential multi-year requirements. Certainly such a statement indicates the possibility that multi-year could be pursued at that time. Since the Services are currently preparing their FY 96 budget requirements, it is entirely appropriate for the Navy to consider multi-year procurement as they prepare their budget submission.

The report further recommended that the USD(A&T) include such use in the Acquisition Decision Memorandum (ADM) resulting from the Milestone IV review. As a matter of record, the ADM that was issued on March 11, 1994 approved Milestone IV for the AV-8B Remanufacture program, the use of long lead procurement, and designated the program an ACAT I C. However, it did not address multi-year procurement for the AV-8B Remanufacture Program.

You should be apprised that if the Navy elects to pursue multi-year procurement, the earliest this would be possible is FY 97. This would require advance procurement funding in FY 96. As you know, in today's resource constrained environment, the utilization of multi-year procurement is carefully scrutinized not only at the Service level but also at the OSD level to ensure expected savings are achievable and that resource flexibility is not unnecessarily reduced. The Navy has indicated to me that they are concerned about potential savings given the current production profile of 4/4/7/12/13/18/15 with procurement beginning in FY94. I have attached their specific comments for your consideration.

I recommend that the Draft Report be revised to reflect the above comments. Finally, the Department considers numerous programs on an annual basis for multi-year procurement as reflected in the multi-year justification package submitted to the Congress each year. Certainly the Navy

could pursue multi-year in FY 97 or future years if justifiable and feasible within their resource requirements, and in the best interest of the Department.

Gene H. Porter
Director, Acquisition
Program Integration

Attachment

cc: DASN AIR

Department of the Navy Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(Research, Development and Acquisition)
WASHINGTON, D.C 20350-1000

2 May 1994

MEMORANDUM FOR MR. SMITH, OFFICE OF THE UNDER SECRETARY OF DEFENSE (ACQUISITION)/ACQUISITION PROGRAM INTEGRATION

Subj: DEPARTMENT OF DEFENSE INSPECTOR GENERAL DRAFT AUDIT REPORT, " AV-8B REMANUFACTURE PROGRAM AS PART OF THE DEFENSE ACQUISITION BOARD REVIEW PROCESS FY - 1994" (PROJECT NO. 3AE-0063-03)

Encl: (1) Comments on DODIG Draft Audit Report for AV-8B Remanufacture Program

We have reviewed the subject report and forward our comments as enclosure (1).

W. J. Schaefer
DASN AIR

COMMENTS ON DODIG DRAFT AUDIT REPORT FOR
AV-8B REMANUFACTURE PROGRAM

Finding A: Multiyear Procurement for the AV-8B Remanufacture Program

DASN AIR Comments: Concur with the finding that multiyear procurement for the AV-8B remanufacture program was not addressed in the Acquisition Strategy Report and that potential savings could accrue. Do not concur with the monetary benefits claimed by the 12% savings figure postulated. Savings during the last multiyear AV-8B procurement were close to 8%, but not 12%. It will be very difficult to achieve 12% savings unless procurement quantities increase substantially.

Also, initiation of a multiyear procurement (MYP) in FY 1996 would require increased funding in the FY 1995 President's Budget for advanced procurement requirements. Additionally, the FY 1995 budget would have to specifically identify the funding requested as required for a MYP beginning in FY 1996. Since neither of these additions was part of the budget submitted to Congress, it is not feasible to expect that the Program Manager could initiate MYP beginning in FY 1996. The earliest start now possible for AV-8B MYP would be FY 1997, with the required advance procurement funding in FY 1996.

Specific Comments:
Page 11. "Estimates of the cost of the multiyear contract and the anticipated cost savings are computable in a realistic manner due to the production experience that already exists for the AV-8B aircraft and the prior use of multiyear procurement for essentially the same aircraft."

At the time the Acquisition Strategy Report was submitted, we believed that multiyear savings could be possible starting in FY 1996; however, we have recently completed negotiations for FY 1994 and FY 1995 in which the contractor demonstrated that the remanufacture program, having never been performed before, is not a stable undertaking, even though the first two lots of 4 aircraft in FY 1994 and FY 1995 have been negotiated. Further, the planned low production rate (4, 4, 7, 12, 13, 18, 15 during FY 1994 through FY 2000) and the extensive requirements for government furnished components which is a significant factor in the remanufacture program, will add risk to the overall production cost. Until actuals have been accumulated, it will be difficult to accurately estimate the costs of potential multiyear contracts.

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