Audit Report

OFFICE OF THE INSPECTOR GENERAL

ACQUISITION OF COMMON AIRCRAFT FOR NAVY AND AIR FORCE UNDERGRADUATE PILOT TRAINING

Report Number 92-063 March 27, 1992

Department of Defense

The following acronyms are used in this report.

BFTS.....Bomber-Fighter Training System
DMR.....Defense Management Report
EFS.....Enhanced Flight Screener
GAO.....General Accounting Office
ITRO.....Interservice Training Review Organization
JPATS.....Joint Primary Aircraft Training System
Masterplan.....Department of Defense 1989 Trainer Aircraft Masterplan
UHPT.....Undergraduate Helicopter Pilot Training
UPT.....Undergraduate Pilot Training

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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ARLINGTON, VIRGINIA 22202-2884

March 27, 1992

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION
ASSISTANT SECRETARY OF DEFENSE (FORCE MANAGEMENT AND PERSONNEL)
COMPTROLLER OF THE DEPARTMENT OF DEFENSE
ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on the Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (Report No. 92-063)

We are providing this final report for your information and use. Comments on a draft of this report were considered in preparing the final report. DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, the addressees must provide final comments on the unresolved issues by April 30, 1992. See the "Status of Recommendations" section at the end of each finding for the unresolved recommendations and specific requirements for these comments. If appropriate, you may propose alternative methods for accomplishing desired improvements. Recommendations and potential monetary benefits are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment. We also ask that your comments indicate concurrence or nonconcurrence with the material internal control weaknesses identified in Part I.

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact Mr. John E. Meling at (703) 614-3994 (DSN 224-3994) or Mr. David Wyte at (703) 693-0497 (DSN 223-0497). The distribution of this report is listed in Appendix J.

Robert J. Lieberman
Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Army
Secretary of the Navy
Secretary of the Air Force
Commandant of the Marine Corps

Office of the Inspector General

REPORT NO. 92-063 March 27, 1992
(Project No. 1AS-0001)

ACQUISITION OF COMMON AIRCRAFT FOR NAVY AND AIR FORCE UNDERGRADUATE PILOT TRAINING

EXECUTIVE SUMMARY

Introduction. The Under Secretary of Defense for Acquisition approved the Department of Defense's 1989 Trainer Aircraft Masterplan (Masterplan), which is a planning document for procurement of Navy and Air Force training aircraft through fiscal year 2015. Decisions affecting delivery of over 2,200 trainer aircraft, with potential acquisition costs of over $17 billion, could result from the procurement strategy outlined in the Masterplan.

Objectives. Our objective was to determine whether the programs contained in the Masterplan would enhance the quality and adequacy of Navy and Air Force pilots, overcome existing and anticipated training deficiencies, improve training effectiveness, modernize aging trainer aircraft fleets, and minimize acquisition and operation costs. In addition, we reviewed procedures and internal controls used in developing the Masterplan.

Audit Results. The audit disclosed four reportable conditions.

o The Navy and Air Force overstated the number of replacement aircraft required and accelerated the timing as to when the aircraft are needed. As a result, the Navy and Air Force will unnecessarily procure 351 trainer aircraft costing about $2.6 billion and prematurely replace as many as 417 aircraft (Finding A).

o The Air Force did not adequately justify replacement of its T-41 trainer aircraft with a new Enhanced Flight Screener aircraft. As a result, the Air Force can avoid an expenditure of $28 million for 125 Enhanced Flight Screener aircraft (Finding B).

o The Navy requirement for fixed-wing training of helicopter pilots before commencing undergraduate helicopter pilot training is neither a cost-effective nor an efficient use of training time. Eliminating this fixed-wing training requirement would reduce Navy undergraduate helicopter pilot training costs by about $300 million over the Future Years Defense Program (Finding C).

o The Defense Management Review 962 proposal to consolidate all DoD undergraduate helicopter pilot training has merit. Army and Navy undergraduate helicopter pilot training can be combined at the Army Aviation Center, Fort Rucker, Alabama, thereby relieving safety concerns at the Naval Air Station, Whiting Field, Florida, and reducing Navy training costs by about $79 million over the Future Years Defense Program (Finding D).

Internal Controls. The Air Force's internal controls were not sufficient to ensure that the acquisition of the Enhanced Flight Screener aircraft was justified. Additional details are provided in Part I and Finding B of this report.

Potential Benefits of Audit. We estimated that the Navy and Air Force could avoid up to $780 million in procurement costs, the Air Force could avoid up to $495 million in modification costs, and the Navy could avoid up to $379 million in operation and maintenance costs (Appendix H).

Summary of Recommendations. We recommended that a new DoD Masterplan be prepared; program funds for the Tanker-Transport Training System be withheld if the Air Force continues funding T-38 PACER CLASSIC modifications; plans to acquire the Enhanced Flight Screener be canceled; the Defense Management Report 962 proposal to eliminate the fixed-wing training requirement for Navy and Marine Corps helicopter students be approved; and DoD undergraduate helicopter pilot training be consolidated.

Management Comments. The Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) and the Military Departments concurred with revising the Masterplan. The Deputy Director, the Navy, and Air Force nonconcurred with the extent of the recommended aircraft reductions. The Deputy Comptroller of the Department of Defense and the Air Force nonconcurred with deferring the procurement of the Tanker-Transport Training System aircraft or terminating T-38 aircraft PACER CLASSIC modifications. The Air Force nonconcurred with canceling the Enhanced Flight Screener. The Assistant Secretary of Defense (Force Management and Personnel) nonconcurred with eliminating Navy fixed-wing training for helicopter pilots and relocating Undergraduate Helicopter Pilot Training at the Army Aviation Center, Ft. Rucker.

Audit Response. We stand by our recommendations. A full discussion of management's comments and audit's response is summarized in Part II of this report, and the complete texts of management's comments and our audit response to Navy comments on Findings C and D are in Part IV of the report.

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This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the information officer, Audit Planning and Technical Support Directorate, (703) 693-0340.

PART I - INTRODUCTION

Background

The 1989 National Defense Authorization Act directed the Secretary of Defense to submit a report outlining a procurement plan for future Navy and Air Force trainer aircraft. In preparing the report, the Secretary is to develop a plan that will lead to the Navy and Air Force procuring similar trainer aircraft. The Secretary is also to address the feasibility of reversing the order of the Air Force's T-37 and T-38 aircraft replacement programs to take advantage of the cost savings associated with the ongoing production of the Navy's T-45A "Goshawk" advanced trainer aircraft.

In response to the Act, DoD submitted the Department of Defense 1989 Trainer Aircraft Masterplan (Masterplan) to Congress in February 1989. The Under Secretary of Defense for Acquisition and the Secretaries of the Navy and Air Force approved the Masterplan, which was prepared by Navy and Air Force training officials. The Masterplan presented a strategy to replace Navy and Air Force trainer aircraft over a 25-year period. Navy and Air Force trainer aircraft included in the Masterplan are described in Appendix A.

The Masterplan identified opportunities for joint-Service acquisition of three aircraft training systems. The Joint Primary Aircraft Training System (JPATS) is to replace the Navy's T-34C and the Air Force's T-37 aircraft. The Tanker-Transport Training System will initiate training within the tanker-transport track of the Air Force's Specialized Undergraduate Pilot Training Program and may be a suitable candidate to replace the Navy's T-47 aircraft. The Bomber-Fighter Training System is to replace the Air Force's T-38 aircraft and may be a suitable candidate to replace the Navy's T-45A aircraft. DoD also concluded that joint Navy and Air Force acquisition of the T-45A aircraft was not cost-effective. Specifically, the small cost avoidance benefits associated with the Air Force purchase of the T-45A aircraft were negated by the cost of retiring the T-38 aircraft before the expiration of its useful service life in FY 2005 and the funding impact of acquiring the other three planned joint-Service aircraft training systems. In summary, the Masterplan proposed procurement of 2,214 aircraft totaling about $17.6 billion (Appendix B).

Objectives

Our objective was to determine whether the programs contained in the Masterplan would:

- o enhance the quality and adequacy of Navy and Air Force pilots,
- o overcome existing and anticipated training deficiencies,
- o improve training effectiveness,
- o modernize aging trainer aircraft fleets, and
- o minimize acquisition and operation costs.

In addition, we evaluated the internal controls used to develop the Masterplan.

Scope

The audit was performed from October 1990 through May 1991. We evaluated budget and training documents, legislation, proposed legislation, contracts, reports, studies, service life analyses of trainer aircraft, and other documents relating to undergraduate pilot training dated between October 1988 and May 1991.

This economy and efficiency and program audit was performed 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 considered necessary. Activities visited or contacted during the audit are listed in Appendix I.

Internal Controls

We evaluated the effectiveness of internal controls that the Navy and Air Force established to determine the number of trainer aircraft needed to meet future undergraduate pilot training (UPT) requirements as outlined in the Masterplan. The audit identified a material internal control weakness as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effective to ensure that alternatives to the Enhanced Flight Screener aircraft were adequately addressed in the Air Force systems acquisition approval process, as required by DoD Directive 5000.1, "Defense Acquisition," February 23, 1991.[1/] In addition, controls were not effective to ensure that the Enhanced Flight Screener acquisition was economically justified in accordance with DoD

1/ DoD Directive 5000.1, "Defense Acquisition," February 23, 1991, revised DoD Directive 5000.1, "Major and Non-major Defense Acquisition Programs," September 1, 1987.

Instruction 7041.3, "Economic Analysis and Program Evaluation for Resource Management," October 18, 1972. Recommendation B.2. in this report, if implemented, will correct these weaknesses. A copy of this report is being provided to the senior official responsible for internal controls within the Air Force.

Prior Audits and Other Reviews

Numerous prior reports have been issued on trainer aircraft requirements, eliminating fixed-wing training for Navy undergraduate helicopter pilots, and consolidating all undergraduate helicopter pilot training at the Army Aviation Center, Fort Rucker, Alabama. A summary of the reports issued is in Appendix C.

Other Matters of Interest

As part of the Defense Management Review, the Comptroller of the Department of Defense prepared Defense Management Report (DMR) 962, which proposed opportunities for improving the way that military training is managed. The DMR included proposals to consolidate all undergraduate helicopter pilot training at the Army Aviation Center, Fort Rucker, Alabama, and to cancel the remaining Tanker-Transport Training System procurement. The Comptroller estimated that implementation of the two proposals would save $855 million (consolidation--$92 million and cancellation--$763 million) over the Future Years Defense Program ending in FY 1997.

The Deputy Secretary of Defense directed that the Assistant Secretary of Defense (Force Management and Personnel) further study the viability of the two proposals after review of DMR 962. In January 1991, the Assistant Secretary of Defense (Force Management and Personnel) deferred his review of the two proposals until the completion of our audit. We address the proposal to consolidate all helicopter training in Finding D and the proposal to cancel the remaining Tanker-Transport Training System procurement in Finding A.

PART II - FINDINGS AND RECOMMENDATIONS

A. DEPARTMENT OF DEFENSE 1989 TRAINER AIRCRAFT MASTERPLAN

Because of significant events after publication and modifications made to existing trainer aircraft, the Masterplan did not provide sound justification supporting the quantity and timing of Navy and Air Force replacement trainer aircraft planned for the next 25 years. Continued adherence to the Masterplan will result in the procurement of 351 excess replacement aircraft costing $2.6 billion and the premature delivery of 417 replacement aircraft.

DISCUSSION OF DETAILS

Background

Since the Masterplan was approved, the Services have significantly reduced annual pilot training rates in recognition of force structure reductions, increased pilot active duty obligations, and improved pilot selection procedures. Specifically, the Navy and Marine Corps have reduced annual pilot production goals from 1,500 to about 1,400 students per year, while the Air Force has reduced annual pilot production goals from 1,890 to about 1,400 students per year.

Force structure reductions. DoD is downsizing its force structure because of reduced threat and budget constraints. Specifically, the DoD FY 1992/1993 Presidential budget submission requires that by FY 1995 the Navy reduce the number of carrier air wings from 15 to 13 and the Air Force reduce the number of tactical fighter wings from 36 to 26 and the number of strategic bombers from 268 to 181. As a result of these reductions, the Navy and Air Force will each close one UPT facility.

Aviator Career Improvement Act. The Aviator Career Improvement Act of 1989 requires that military personnel complete 8 years of active duty upon successful completion of fixed-wing jet aircraft training. Previously, the Air Force required an 8-year commitment, while the Navy and Marine Corps required only a 6-year and a 4.5-year commitment, respectively. The Act further requires that military personnel who successfully complete other types of UPT complete 6 years of active duty. In addition, the Act increases the number of years an aviator must be in an operational or proficiency flying position to continue eligibility for Aviation Career Incentive Pay. DoD's implementation of the Act, which began in October 1991, is expected to reduce annual pilot attrition rates and therefore reduce the number of undergraduate pilots that the Services are required to train annually.

PACER CLASSIC modifications will extend the service life of the T-38's from FY 2010 to beyond FY 2025 as a result of the Tanker-Transport Training System aircraft procurement and lower annual UPT rates for bomber-fighter pilots. Accordingly, the Air Force's plans to replace the T-38 with a Bomber-Fighter Training System (BFTS) can be deferred for 20 years. The delayed BFTS acquisition of 417 aircraft would enable the Government to avoid interest costs totaling about $28.8 billion (Appendix F).

Should the Air Force determine that it is essential to proceed with the BFTS procurement, the need to continue with PACER CLASSIC modifications should be reassessed. Because of reduced UPT rate goals for bomber-fighter pilots and the introduction of the Tanker-Transport Training System T-1A aircraft, current and planned investment costs made in PACER CLASSIC modifications will not be recovered by FY 2010. As a result, the Air Force could, by discontinuing T-38 PACER CLASSIC modifications, avoid costs totaling $495 million for FY's 1992 through 1997.

Tanker-Transport Training System. A valid economic cost-benefit determination cannot be made for the Tanker-Transport Training System until annual UPT rates stabilize and the Air Force decides whether to continue PACER CLASSIC modifications. Accordingly, we could not determine whether continued procurement of the Tanker-Transport Training System should be canceled, as proposed in DMR 962. Nevertheless, we believe funding for the Tanker-Transport Training System should be held in abeyance pending an Air Force decision to either continue or discontinue T-38 aircraft PACER CLASSIC modifications.

Conclusion

Before DoD invests $17 billion in 2,214 replacement trainer aircraft, a new Masterplan needs to be prepared. This new Masterplan should:

- o recompute replacement aircraft requirements to coincide with lower annual UPT rates,
- o expand objectives to discuss training program deficiencies,
- o consider Army trainer aircraft replacement needs,
- o consider flying hour objectives that could be assigned to less costly aircraft, and
- o recognize service life modifications already made to existing aircraft.

Adherence to the Masterplan will result in excess new replacement trainer aircraft being procured and in the premature retirement of underused existing aircraft. We estimated that DoD could reduce aircraft acquisition costs by over $752 million (30 Air Force T-1A's and 42 Navy T-45A's) over the Future Years Defense Program ending FY 1997 and avoid another $1.8 billion in acquisition costs for FY 1998 and beyond.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend that the Under Secretary of Defense for Acquisition and the Secretaries of the Military Departments prepare a new Department of Defense Trainer Aircraft Masterplan that:

a. Recognizes decreased Service annual undergraduate pilot training rates and ongoing aircraft modifications by reducing planned numbers of Tanker-Transport Training System aircraft, Joint Primary Aircraft Training System aircraft, Bomber-Fighter Training System aircraft, and T-45A aircraft, as indicated in Appendix E.

Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) comments. The Deputy Director partially concurred with Recommendation A.1.a. stating that the Masterplan would be updated in FY 1992 concurrent with the preparation of the Military Departments' FY 1994 Program Objective Memorandum plans and would recognize the latest revised requirements established by the Military Departments. The Deputy Director stated that the numbers of aircraft identified in Appendix E may not be appropriate when the Masterplan is updated because force structure and other changes are ongoing. In addition, the Deputy Director emphasized that the purpose of the 1989 Masterplan was to provide a strategy for joint-Service acquisition of aircraft systems in the future and should not be considered a programming document. In respect to programming, the Deputy Director stated that the appropriate mechanism for adjusting quantities and schedules for training aircraft programs was the annual budget review process and program milestone reviews.

Audit response. We agree that the Masterplan is a training aircraft acquisition strategy rather than a programming document. However, the Masterplan should serve as the foundation for programming documents for acquiring replacement training aircraft and be used in the annual budget review process and at program milestone reviews. In this respect, we believe that direct linkage should exist between the Masterplan and programming documents for determining aircraft requirements.

Navy comments. The Assistant Secretary of the Navy (Research, Development and Acquisition) partially concurred with Recommendation A.1.a. The Assistant Secretary's comments paralleled the Deputy Director's comments. In addition, the Assistant Secretary stated that because of force drawdowns, curriculum changes, and revised student training requirements, the Navy has reduced JPATS requirements by 3 aircraft and T-45A requirements by 32 aircraft.

Audit response. Although the Navy comments identified net JPATS and T-45A aircraft reductions, training changes made after the audit's completion effected the extent of the drawdown. Specifically, the Navy justified requirements for 25 of the 28 JPATS aircraft questioned in the draft report by adding curriculum changes for flight officer training. As to T-45A aircraft requirements, the Navy increased student loading requirements for jet training from 410 to 450 students annually resulting in a need for 10 additional T-45A aircraft. As a result, the Navy reduced T-45A aircraft requirements by 32 aircraft rather than by 42 aircraft, as suggested in the draft report. Regardless, the Navy's comments on the JPATS and T-45A aircraft requirements were considered responsive to the intent of Recommendation A.1.a. Because the Assistant Secretary did not comment on the Navy's BFTS aircraft requirements, we ask that the Assistant Secretary provide comments on the requirements in response to Recommendation A.1.a. in the final report.

Air Force comments. The Deputy Chief of Staff for Plans and Operations partially concurred. The Deputy Chief's comments paralleled the Deputy Director's comments. Despite the fact that the Masterplan was not considered a programing document, the Deputy Chief of Staff stated that training aircraft replacement requirements were recomputed based on reduced pilot production rates. Based on an annual student production requirement of 1,200 students, the Air Force projected that it would need 417 JPATS aircraft and less than 180 Tanker-Transport Training System aircraft. The Deputy Chief of Staff advised us that the Air Force was reevaluating the need for the BFTS aircraft.

Audit response. We applaud the Air Force for recomputing the JPATS and Tanker-Transport aircraft requirements. However, we noted several problems with the computation.

In reviewing the Air Force's algorithm for recomputing JPATS aircraft requirements, we noted that factors for aircraft flying hour requirements and attrition rates were overstated. In the algorithm, the Air Force assumed that all students would complete the JPATS flying hour requirement and that the JPATS would exceed the T-37 and

T-38 aircraft attrition rates. As a result, we believe the Air Force overstated annual JPATS flying hour requirements by 8,752 hours and attrition rate by .9 mishap incidences per 100,000 aircraft flying hours. By applying the reduced factors in the algorithm, we concluded that the JPATS requirements were 362 aircraft versus the 417 aircraft projected by the Air Force.

The Air Force also used an inappropriate aircraft attrition rate in recomputing Tanker-Transport aircraft requirements. The Tanker-Transport aircraft is a commercial aircraft that should have an attrition rate comparable to that of a Boeing B-737 aircraft. However, the Air Force used an aircraft attrition rate in the algorithm that exceeded the B-737 attrition rate by .7 mishap incidences per 100,000 aircraft flying hours. By applying the appropriate aircraft attrition rate in the algorithm, we concluded that the Tanker-Transport requirements were 162 aircraft versus the 180 aircraft projected by the Air Force. We therefore request that the Air Force reconsider its response to Recommendation A.1.a. when responding to the final report.

b. Examines the quality and adequacy of undergraduate pilot training, defines existing and anticipated training deficiencies, demonstrates how new replacement aircraft will enhance training effectiveness, and provides cost-benefit analyses to economically justify acquisition of replacement aircraft.

Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) comments. The Deputy Director concurred with Recommendation A.1.b. stating that these studies, analyses, and trade-offs would be required to provide the underpinning necessary to obtain a DoD approved Masterplan.

Army comments. The Deputy Chief of Staff for Operations and Plans concurred with Recommendation A.1.b.

Navy comments. The Assistant Secretary of the Navy (Research, Development and Acquisition) nonconcurred with Recommendation A.1.b. stating that building a Masterplan that assesses the entire training continuum, its requirements, its quality, its adequacy, its deficiencies, its cost breakdown, and its effectiveness would provide diminishing returns because of instant depreciation of the subject matter without constant revision.

Air Force comments. The Deputy Chief of Staff for Plans and Operations partially concurred stating that the Joint Requirements Oversight Council and the Air Force Summit process were the optimum methods of defining training deficiencies and requirements and examining how new replacement aircraft will enhance training effectiveness.

Audit response. In his response, the Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) recognized that when the new Masterplan is prepared, additional studies, analyses and trade-offs would be required to provide the underpinning necessary to obtain DoD approval. The Assistant Secretary of the Navy and the Air Force Deputy Chief of Staff also need to consider the impact of changed circumstances when preparing the new Masterplan. Therefore, we request that the Navy Assistant Secretary and the Air Force Deputy Chief of Staff reconsider their comments to Recommendation A.1.b. when responding to the final report.

c. Addresses Army trainer aircraft replacement requirements.

Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) comments. The Deputy Director partially concurred with Recommendation A.1.c. stating that the Masterplan could also address helicopter training, which would expand the scope of the Masterplan.

Army comments. The Deputy Chief of Staff for Operations and Plans concurred with Recommendation A.1.c.

Navy comments. The Assistant Secretary of the Navy (Research, Development and Acquisition) concurred with Recommendation A.1.c.

Air Force comments. The Deputy Chief of Staff for Plans and Operations did not comment to Recommendation A.1.c.

Audit Response. Because the Deputy Chief of Staff for Plans and Operations did not comment, we request that he submit comments to Recommendation A.1.c. when responding to the final report.

2. We recommend that the Secretary of the Navy further reduce the T-45A requirements and make appropriate increases in the Joint Primary Aircraft Training System aircraft requirements, when changes are made to the Navy's syllabuses as a result of the Navy Primary Aircraft Training System Concept Study.

Navy comments. The Assistant Secretary of the Navy (Research, Development and Acquisition) partially concurred stating that the Chief of Naval Operations with assistance from the Naval Air Systems Command would use the results of the ongoing Navy Primary Aircraft Training System Concept Study to make appropriate adjustments in JPATS and T-45 aircraft requirements.

3. We recommend that the Secretary of the Air Force defer planned procurements of the Bomber-Fighter Training System and Tanker-Transport Training System if PACER CLASSIC modification funding is continued for the T-38 aircraft.

4. In the event that planned procurements of the Bomber-Fighter Training System and Tanker-Transport Training System proceed as planned in the Masterplan, we recommend that the Secretary of the Air Force terminate PACER CLASSIC modification funding for the T-38 aircraft.

Air Force comments. The Deputy Chief of Staff for Plans and Operations nonconcurred with Recommendations A.3. and A.4. He stated that the T-38 PACER CLASSIC modification program was needed to ensure an airworthy platform for current training and to meet projected flying hour requirements in the near years. In respect to the BFTS, he stated that the Air Force was funding a study to examine the cost-effectiveness of further modifications to the T-38 as an alternative to the BFTS because of force structure cuts, T-45 procurement slip, possible elimination of the Tactical Air Command Lead-In Fighter Training requirement, and smaller BFTS aircraft requirements (375 aircraft versus 900 aircraft). In respect to the Tanker-Transport Training System, he stated that the aircraft was essential to implementation of the Specialized Undergraduate Pilot Training concept that was accepted by the Air Force, OSD, and Congress. Under the concept, he stated that the Tanker-Transport Training System will meet the needs of the Tanker-Transport cockpits and the T-38 will meet the needs of the Bomber-Fighter requirements.

Audit response. In our opinion, it is not cost-effective to continue with the Tanker-Transport Training System procurement plans if PACER CLASSIC modification funding is continued for the entire T-38 aircraft fleet, as planned. Through FY 1991, the Air Force has expended $275 million for PACER CLASSIC modifications to over 735 aircraft (about $375,000 per aircraft). Based on management comments, the Air Force only needs to modify 375 T-38 aircraft to meet future Bomber-Fighter requirements under the Specialized Undergraduate Pilot Training concept. In effect, the Air Force will not fully recover PACER CLASSIC modification investment costs already incurred for 360 T-38 aircraft (about $135 million) by proceeding with the Tanker-Transport Training System procurement plans.

In addition, the Air Force will not recover another $242 million in planned investment costs for the 360 excess T-38's if funding of the PACER CLASSIC modifications is continued for the entire T-38 fleet. Accordingly, we still question the cost-effectiveness of not deferring plans to procure the Tanker-Transport Training System if the PACER CLASSIC modification program continues as planned. We therefore request that the Air Force reconsider its response to Recommendations A.3. and A.4. when responding to the final report.

Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) comments. The Deputy Director partially concurred with Recommendation A.3. He agreed that the BFTS procurement should be deferred. However, he did not agree that the Tanker-Transport Training System procurement should be deferred because it was a vital part in implementing the Specialized Undergraduate Pilot Training concept in the Air Force. He further stated that deferring Tanker-Transport aircraft procurement in the middle of production would not be wise until aircraft requirements are updated. In this respect, he stated that time was available to delete aircraft from the end of the program if it is subsequently determined that fewer aircraft are required.

The Deputy Director also partially concurred with Recommendation A.4. stating that the BFTS, the Tanker-Transport Training System, and the T-38 PACER CLASSIC modification program should be reviewed as a package and each program adjusted as necessary to best meet expected undergraduate pilot training requirements.

5. We recommend that the Comptroller of the Department of Defense withhold Tanker-Transport Training System program funding pending the T-38 aircraft PACER CLASSIC modification decision by the Air Force.

Deputy Comptroller of the Department of Defense (Program/Budget) comments. The Deputy Comptroller partially concurred with Recommendation A.5. stating that funding for T-38 PACER CLASSIC modification costs had been reduced from $700 million to under $100 million involving only cockpit avionics changes. The Deputy Comptroller further stated that the Air Force needed the Tanker-Transport aircraft to tailor its pilot training to the student's needs.

Audit response. The Deputy Comptroller's comments may indicate a misunderstanding which T-38 PACER CLASSIC modification program was being discussed in the finding. The Air Force has two programs that are identified as T-38 PACER CLASSIC modification programs. One program is a multistage safety improvement program, which was discussed in the finding, and the other is a program to study further T-38 modifications as an alternative to the BFTS. The T-38 cockpit avionics changes are part of the latter program.

Since the Deputy Director of Defense Research and Engineering (Tactical Warfare Programs) believes that the Tanker-Transport aircraft is necessary to implement the Specialized Undergraduate Pilot Training concept in the Air Force, we believe that funding adjustments need to be made to the T-38 PACER CLASSIC multistage safety improvement program. Specifically, continued PACER CLASSIC modification funding should be limited to the 375 T-38s needed to meet future Bomber-Fighter requirements. We therefore request that the Comptroller reconsider his response to Recommendation A.5. when responding to the final report.

STATUS OF RECOMMENDATIONS

		Response Should Cover:			
Number	Addressee	Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues*
A.1.a.	Navy	X	X	X	M
	Air Force	X	X	X	M
A.1.b.	Navy	X	X	X	
	Air Force	X	X	X	
A.1.c.	Air Force	X	X	X	
A.3.	Air Force	X	X	X	M
A.4.	Air Force	X	X	X	M
A.5.	DoD Comptroller	X	X	X	M

* M = monetary benefits

B. Air Force Enhanced Flight Screener

The Air Force was unnecessarily replacing its T-41 aircraft with an Enhanced Flight Screener (EFS). The Air Force Statement of Need did not consider the full range of training alternatives, and the Air Force economic analysis was not made in accordance with DoD Instruction 7041.3. In addition, the subsequent Air Force decision delaying student placements in specialized undergraduate training tracks eliminated a primary justification for the replacement aircraft. As a result, the EFS was not the least costly training alternative to satisfy the stated need for replacing the T-41 trainer aircraft. Canceling the Air Force EFS procurement will avoid an expenditure of approximately $28 million for 125 aircraft in FY 1992 through FY 1997.

DISCUSSION OF DETAILS

Background

DoD Directive 5000.1, "Defense Acquisition," February 23, 1991, requires that the Services consider a full range of alternatives before deciding to initiate new acquisition programs. In this respect, DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991, requires that the Services focus on identifying deficiencies in current capabilities and opportunities to provide new capabilities in the mission need determination process. The Services are to describe deficiencies and opportunities in terms of broad operational capability needs and then to evaluate these needs to determine if they can be satisfied by nonmaterial solutions. Nonmaterial solutions include changes in operational doctrine, concepts, and training.

Enhanced Flight Screener Statement of Need

In the Statement of Need for the EFS aircraft, the Air Force stated that it needed a more capable flight screener than the T-41 aircraft to expose UPT program candidates to a wider spectrum of flying maneuvers, including aerobatics, high-G (gravity) maneuvers, and overhead traffic patterns. This was essential for reducing attrition rates and implementing specialized UPT programs to enable the Air Force Training Command to emphasize flying events designed to develop quality Bomber-Fighter and Tanker-Transport pilots. Furthermore, an Air Force economic analysis demonstrated that the EFS investment in 125 aircraft would be recovered within 6 years as a result of training efficiencies. Contrary to the Air Force justifications for the EFS, less costly training alternatives exist.

Alternatives. The Air Force's EFS Statement Of Need did not consider other approaches or possible training solutions to reduce UPT attrition rates as an alternative to the procurement of new EFS aircraft. For example, in 1975 the Air Force study "HASTY BLUE" demonstrated that UPT attrition rates could be reduced by one-half without requiring the use of any flight screener aircraft. Specifically, the study showed that the Air Force could reduce UPT attrition rates and improve student screening by using a relatively simple "desk top" flight training simulator, which when combined with its series of intelligence and physical dexterity tests, greatly increased the predictive ability of the screening process. This was a nonmaterial and cost-effective alternative for reducing UPT attrition rates that the Air Force did not consider in its EFS Statement of Need.

Cost analysis. The Air Force did not perform its EFS comparative economic analysis in accordance with DoD Instruction 7041.3, "Economic Analysis and Program Evaluation for Resource Management," October 18, 1972. This Instruction requires a cost-benefit analysis involving a choice or trade-off between two or more alternatives, even when one of the alternatives is to do nothing. The Instruction requires that present value or discounted current dollar factors be applied to annual cost-benefit savings and then comparing the cumulative annual discounted savings to investment costs to determine the most economical rate of return between alternatives.

In preparing its cost-benefit analysis, the Air Force underestimated the cost of the EFS investment acquisition by $800,000. The 125 EFS aircraft were estimated to cost $27.7 million rather than the $26.9 million investment cost used in the Air Force analysis.

The Air Force analysis inflated cost-benefit savings by $5 million when the study assumed that all UPT candidates were admitted from Officers Training School. Contrary to this assumption, about 23 percent of UPT candidates are admitted from Officers Training School, and the majority of students come from the Air Force Academy and the Reserve Officer Training Corps.

Cost-benefit savings were also inflated by $12.1 million for claimed benefits unrelated to the acquisition. The Air Force analysis applied EFS cost avoidance benefits not only to the primary phase of UPT but extended it to the more expensive advanced phases of UPT. Extending cost avoidance benefits to advanced UPT was incorrect. EFS benefits are only applicable to the primary phase of UPT where training costs are three to four times less expensive than advanced UPT.

In addition, the Air Force accelerated cost avoidance by $4.3 million. According to the analysis, cost-benefit savings resulting from the acquisition of the EFS aircraft were to begin with the delivery of the first aircraft rather than phased to coincide with the aircraft's 3-year delivery schedule. Based on the erroneous assumptions, and without applying present value factors, the Air Force computed a 6-year investment return for the EFS acquisition (Appendix G).

We determined that after applying present value factors to the EFS savings, the EFS investment return actually exceeded the aircraft's 25-year economic life. Based on economic analysis criteria established in DoD Instruction 7041.3, we determined that cumulative savings would not exceed the $28 million EFS investment cost until after FY 2020. Our result sharply contrasts with the 6-year investment payback that the Air Force determined. Accordingly, the EFS aircraft does not provide the Air Force an economic UPT program advantage when compared to the status quo.

Classification of students. The Air Force does not intend to assign students to specialized UPT tracks before starting primary UPT. The Air Force Chief of Staff made this decision in February 1991. The Air Force will continue using its primary training aircraft to teach students generic flying skills, rather than concentrating on skills designed to support specific training tracks. As a result of the Air Force Chief of Staff decision, the EFS aircraft is no longer essential for implementation of the Air Force specialized UPT program.

Conclusion

The Air Force did not consider all alternatives in justifying the cost-effectiveness of the EFS acquisition. In addition, the Air Force lessened its stated need for the EFS by eliminating the requirement to classify students in specialized UPT tracks before the start of primary aircraft training. Accordingly, we concluded that the Air Force had not adequately justified the operational need to spend $28 million for 125 EFS aircraft and that the planned May 1992 procurement action should be canceled.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Secretary of the Air Force:

1. Cancel plans to acquire the Enhanced Flight Screener.

Air Force comments. The Deputy Chief of Staff for Plans and Operations nonconcurred with Recommendation B.1. stating that the EFS was essential to reducing UPT student attrition rates from 20 to 15 percent. In this regard, he stated that Congress deemed the information proposed in the 1988 Air Force Masterplan as sufficient justification for procuring the EFS. He stated that the EFS requirement was also validated through the Air Force Summit requirements process.

He further stated that the Air Force did not consider "desk top" simulators to be a viable option for screening inexperienced pilot candidates. He stated that Air Training Command's experience with simulators in UPT supported this conclusion. As to the EFS, he stated that the Air Force conducted an EFS trial program at Hondo Field in 1990 using a cross section of average pilot candidates. In this respect, the study showed that all EFS trial program graduates successfully completed UPT.

Although the Deputy Chief of Staff claimed that an economic analysis was not required for the EFS, the Air Force prepared a revised EFS economic analysis showing that the Air Force will recover EFS acquisition costs within 9 years as a result of reduced student attrition rates in UPT.

Audit response. The Air Force still has not adequately considered all alternatives in justifying the cost-effectiveness of the EFS acquisition. Contrary to management comments, the proposed acquisition of the EFS aircraft was not identified in the Air Force 1988 Trainer Aircraft Masterplan. Additionally, the Air Training Command was unable to provide evidence that it had previously used "desk top" flight training simulators for screening and training inexperienced pilot candidates. Instead, Air Training Command experience was limited to using aircraft simulators for rated pilots who had completed UPT. Accordingly, we still believe that the use of "desk top" flight simulators for UPT student candidates is a viable and cost-effective alternative to the EFS for reducing UPT attrition rates. The EFS trial program did provide useful information concerning the ability of the EFS to reduce UPT student attrition rates. However, the EFS trial program would have been more useful if it had provided valid test results to enable the Air Training Command to perform a cost-effectiveness analysis between available screening alternatives to reduce UPT student attrition rates. Available screening alternatives include continued use of

the T-41 training aircraft, procuring the EFS, and procuring "desk top" flight training simulators.

We reviewed the revised Air Force economic analysis prepared for the EFS and concluded that it generally conformed to DoD Instruction 7041.3 policy and procedures. However, the economic analysis was incomplete because the alternative comparisons did not include the "desk top" flight training simulators. The three alternatives compared in the economic analysis were the EFS aircraft, the T-41 training aircraft, and training without the use of screener aircraft. Because the full range of alternatives to the EFS aircraft was not examined as required by DoD Directive 5000.1, we request that the Air Force reconsider its response to Recommendation B.1. in the final report.

2. Before approving Statements of Need for training aircraft, require that all alternatives be analyzed as required by DoD Directive 5000.1 and that the economic analyses be made in accordance with DoD Instruction 7041.3.

Air Force comments. The Deputy Chief of Staff for Plans and Operations concurred with Recommendation B.2. stating that oversight and internal controls were in place to ensure proper numbers of trainer aircraft.

Audit response. We agree that the Air Force has established oversight and internal controls to ensure proper numbers of trainer aircraft. However, these controls were not fully implemented for the EFS aircraft as discussed in the finding. Because the Air Force acknowledges the need to maintain effective internal controls, additional comments on Recommendation B.2. are not required in response to the final report.

STATUS OF RECOMMENDATIONS

		Response Should Cover:			
Number	Addressee	Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues*
1.	Air Force	X	X	X	M

* M = monetary benefits

C. Fixed-Wing Training of Navy and Marine Corps Helicopter Pilots

The Navy requirement that helicopter pilots receive fixed-wing training before they receive undergraduate helicopter pilot training (UHPT) is neither cost-effective nor an efficient use of training time. Fixed-wing training of undergraduate helicopter students is not cost-effective because less than 2 percent of the graduates transition to fixed-wing operational aircraft. Eliminating the fixed-wing training requirement would enable the Navy to reduce UHPT costs by $300 million over the Future Years Defense Program, avoid one-time aircraft replacement costs of about $700 million, and reduce the length of the UHPT program by about 27 weeks.

DISCUSSION OF DETAILS

Background

Approximately 600 Navy, Marine Corps, and Coast Guard student pilots graduate each year from the Navy UHPT program. As part of UHPT, all Navy and Marine Corps students receive fixed-wing training before assignment to the UHPT track. The Navy's UHPT program is a 55-week course, which includes 208 flight hours of combined fixed-wing and helicopter training. Before beginning helicopter training, students spend 33 weeks and 92 flight hours learning basic flying and navigation skills on the Navy's T-34C primary fixed-wing trainer aircraft. After receiving this primary training, each UHPT student spends an additional 22 weeks and 116 flight hours in the Navy's TH-57 "Sea Ranger" helicopter.

In contrast, the Army and Air Force UHPT core program at the Army Aviation Center, Fort Rucker, Alabama, contains no fixed-wing aircraft training, and students spend 20 weeks and 82 flight hours in helicopter training. Students completing either Army or Navy UHPT qualify for Federal Aviation Agency instrument certification.

Navy's Response to the DMR 962 Proposal

The DMR 962 proposal highlighted differences between Army and Navy UHPT programs, and the DMR concluded that forcing Naval UHPT students to select among specialized aircraft training tracks at the outset of training rather than upon completion of basic flight training would preclude the need for fixed-wing training. Eliminating this fixed-wing training requirement would reduce Navy UHPT costs by $50 million each fiscal year, avoid one-time aircraft replacement costs of about $700 million, and reduce the length of the UHPT program by about 27 weeks.

In response to the proposal made in the DMR Decision, the Navy claimed that fixed-wing training for all Navy and Marine Corps helicopter students was both essential and cost-effective. The following paragraphs discuss the Navy's rationale for continuing the fixed-wing training requirement and our assessment of the rationale's validity.

Instrument training. The Navy claimed that T-34C fixed-wing training provided the least expensive method of teaching and determining a student's flight instrument learning abilities; however, the Navy did not define the learning abilities. In responding to the DMR, the Navy assumed that Navy UHPT students would not receive any instrument training during UHPT if fixed-wing training was eliminated and that the Navy would be using noninstrumented Army UH-1 helicopters for UHPT training instead of the instrumented Navy TH-57 helicopter.

Both of these assumptions were incorrect. Specifically, the Army UHPT does include 8 weeks of instrument training in UH-1 helicopters. In addition, Navy UHPT students could continue to be trained on Navy TH-57 helicopters to support Navy specific training requirements. It might become necessary to add instrument flight hours to the TH-57 curriculum by eliminating fixed-wing training in the T-34C, but not to the degree stated in the Navy's response. We noted that the Navy curriculum for the T-34C fixed-wing aircraft and the TH-57 helicopter have similar instrument training events.

Instructor pilots. The Navy claimed that eliminating fixed-wing training would reduce the availability of T-34C fixed-wing flight instructor pilots. The Navy is correct; however, force reductions and the Aviation Career Improvement Act will also decrease the requirement for T-34C flight instructor pilots.

Marine Corps pilots. The Navy claimed that Marine Corps helicopter pilots were often required to transition from helicopter to fixed-wing aircraft during their careers. Our analysis showed that this was not the case. As of February 20, 1991, the Marine Corps had approximately 4,700 qualified fixed-wing and rotary-wing pilots. Marine Corps personnel records showed that only 56 aviators (1.2 percent of the 4,700 active duty aviators) officially transitioned from helicopter to fixed-wing operational aircraft during their military careers. When queried, personnel at the Naval Military Personnel Command told us that Navy pilot transition numbers were even less than the Marine Corps, and that the time and cost to accurately determine the number of pilots transitioned was not worth the effort involved. In addition, we found that once pilots were trained on a specific type of helicopter, they were rarely cross-trained between different types of operational helicopters.

V-22 Osprey training. The Navy claimed that significant Marine Corps fixed-wing and helicopter pilot training will be required in the event the Secretary of Defense approves the V-22 Osprey program for production and deployment. Through June 30, 1991, the Secretary of Defense has disapproved production of the V-22. Accordingly, it is questionable whether the V-22 fixed-wing aircraft training requirement will materialize.

Increased helicopter training flight hours. The Navy claimed that eliminating fixed-wing aircraft training would require that each student receive an additional 59 helicopter flight training hours for instrument training. However, the Navy did not specify what flight events were required for the training. Excluding flight hours spent in fixed-wing training, Navy and Marine Corps students receive 36 more flight hours in a TH-57 (116 hours) than Army and Air Force students receive in the UH-1 helicopter (80 hours). Rather than adding flight hours to its training program to compensate for the loss of fixed-wing training, we believe that the Navy should examine the efficiency and effectiveness of its UHPT program to determine if the additional time and flight hours are required.

Air Force UHPT program. The Navy claimed that the Air Force was dissatisfied with the Army's method of training its helicopter pilots and was going to require fixed-wing training for its helicopter students. In FY 1990, the Air Force did decide to train its undergraduate helicopter students in fixed-wing aircraft. However, in February 1991, the Air Force Chief of Staff reversed that decision because this requirement would cost the Air Force an additional $15 million for fixed-wing training of up to 50 students a year.

Potential Benefits of Eliminating the Navy Fixed-Wing Training Requirement for Helicopter Pilots

As compared to the Army UHPT curriculum, eliminating the fixed-wing training requirement for all Navy and Marine Corps helicopter students would enable the Navy to reduce the length of its UHPT program by about 27 weeks (33 weeks minus 6 weeks for preflight training) and reduce training costs by as much as $300 million over the Future Years Defense Program ($50 million annually). This cost avoidance includes direct and indirect costs for additional flight hours and training time. Additional savings could occur if the Navy adopts a UHPT program similar to the Army's program. Excluding fixed-wing training costs discussed above, the Navy helicopter training program costs $24,000 more per student than the Army's program.

In addition to cost avoidance associated with its UHPT program, elimination of this fixed-wing qualification requirement would also eliminate a need for Navy T-34C replacement trainer aircraft. Beginning in FY 1998, the Navy plans to replace the T-34C and begin receiving JPATS aircraft. The Navy's requirement for 350 JPATS aircraft could be reduced by as many as 140 aircraft by eliminating fixed-wing training of helicopter students. Cost avoidance amounting to as much as $700 million (140 aircraft at $5 million each) could result from this reduced aircraft requirement.

Conclusion

The DMR 962 recommendation to eliminate fixed-wing aircraft training for Navy and Marine Corps helicopter students has merit since less than 2 percent of the students subsequently transition to flying fixed-wing aircraft. Accordingly, we believe that the Navy should eliminate the requirement to train all Navy and Marine Corps helicopter students on fixed-wing aircraft.

RECOMMENDATION, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to eliminate the fixed-wing training requirement for Navy and Marine Corps helicopter students.

Assistant Secretary of Defense (Force Management and Personnel) comments. The Assistant Secretary nonconcurred with Recommendation C. stating that the audit analysis did not provide sufficient rationale to support the recommendation. He believed that the audit analysis did not consider the full range of alternatives, attempted to compare dissimilar programs, and did not include a complete picture of costs and benefits as demonstrated by the position differences between the Inspector General and the Navy for fixed-wing training for Navy helicopter students.

The Assistant Secretary believed that the Navy's position of training undergraduate helicopter pilots in fixed-wing aircraft did serve a purpose because it facilitated screening all potential pilots into jet, propeller, and helicopter pipelines and provided initial skill training in a low-cost aircraft. In reference to flying hour costs, he stated that the cost of the T-34C fixed-wing trainer was considerably less than the cost of Army and Navy helicopters. However, he stated that it was clear that alternative less-expensive screening techniques could produce the same results.

The Assistant Secretary stated that the Navy did not justify the need to fixed-wing train helicopter students to allow helicopter pilots to rotate through billets requiring fixed-wing skills after their first operational helicopter pilot tour. In this respect, he stated that 13 percent of Navy helicopter pilots filled fixed-wing designated billets at any given time while less than 2 percent of these pilots ever transitioned to a fixed-wing career designator. In total, he indicated that over half of the Navy's helicopter pilots could be assigned to a fixed-wing designed flying billet over a 20-year career. Regardless, he stated that the audit analysis was incomplete because it did not address alternative ways of filling these fixed-wing designated billets.

The Assistant Secretary was not convinced by the audit analysis that costs of $50 million per year could be saved by eliminating the full 27 weeks of fixed-wing training provided to undergraduate helicopter pilots. He believed that eliminating fixed-wing training in the T-34C would likely require increased flying hours in the more expensive TH-57 and could increase the number of TH-57's required. To accept the recommendation, he stated that the audit analysis would have to demonstrate that the Navy is overtraining its prospective helicopter pilots.

The Assistant Secretary also questioned the one-time cost avoidance of about $700 million to replace T-34C's used to train undergraduate helicopter pilots with JPATS aircraft. He believed that the audit analysis did not recognize that the Navy had already reduced JPATS requirements based on current drawdown plans.

Accordingly, the Assistant Secretary believed that the Inspector General should have recommended that an objective comprehensive study be conducted by an independent organization in lieu of the draft report recommendation to eliminate fixed-wing training for Navy helicopter pilots. He stated that study objectives should examine opportunities for redesigning helicopter training programs, consider a core curriculum for all Army and Navy helicopter training, highlight legitimate Service-unique requirements that could be examined and costed separately, and address the possibility of using a common training helicopter.

> **Audit response**. We agree with the Assistant Secretary's assertion that the audit analysis did not address all alternatives available to management, compared undergraduate pilot training programs that were implemented differently by the Services and did not identify all costs and benefits affected by eliminating fixed-wing training for Navy undergraduate helicopter pilots.

However, we do not agree with the Assistant Secretary's conclusion that the audit analysis did not provide sufficient rationale to support the recommendation.

Specifically, the Navy could use less expensive alternatives to screen all potential pilots into jet, propeller, and helicopter pipelines. For example, the Air Force used the T-41 aircraft to screen all potential pilots into the various pipelines. In FY 1991, the Air Force screening program for each potential pilot consisted of 14 flying hours in a T-41 aircraft costing about $1,600. At the same time, the Navy screening program for each potential pilot consisted of 66 flying hours in a T-34C aircraft costing about $14,400.

We also clearly pointed out in the audit analysis that the Army and Air Force were more efficient in qualifying their helicopter students for Federal Aviation Agency instrument certification. The primary reason for the difference in efficiency was the Navy's duplication of initial instrument training requirements in the training curriculum for flying hours in the T-34C aircraft and the TH-57 helicopter.

We also addressed the issue of fixed-wing designated flying billets currently filled by helicopter pilots. In conjunction with force reductions and the Aviation Career Improvement Act, we concluded that there would be few helicopter pilots needed to fill fixed-wing designated flying billets. If the Navy and Marine Corps still need helicopter pilots to fill fixed-wing designated flying billets, it would be more cost-effective to provide fixed-wing aircraft training to those helicopter pilots selected to fill the billets.

In the finding, we stated that eliminating the Navy fixed-wing requirement would reduce training costs by as much as $50 million annually. We qualified the amount because of the Navy's contention that it would be necessary to add instrument flight hours to the TH-57 curriculum. However, we do not believe that the additional hours should be significant based on the fact that the Army has demonstrated that UHPT can be successfully completed after 82 flight hours in the UH-1. Under the Navy's existing UHPT program, potential helicopter pilots were receiving 116 flight hours in the TH-57.

Although the Navy has taken reductions in JPATS requirements based on current drawdown plans, the Navy's JPATS requirements still include approximately 140 aircraft to replace T-34C aircraft used to provide fixed-wing training to helicopter students. Accordingly, our projected one-time cost avoidance was based on the 140 aircraft.

Although we appreciate the Assistant Secretary's apprehension to act on the recommendation, the performance of a more comprehensive study as suggested will not alter the fact that it is not cost-effective to provide fixed-wing training to helicopter students when less than 2 percent of Navy and Marine Corps helicopter pilots ever transition to a fixed-wing career designator. Therefore, we request that the Assistant Secretary reconsider his position when responding to the final report.

Navy comments. The Navy also commented on Recommendation C. The complete text of the Navy comments and our audit response addressing fixed-wing training are contained in Part IV.

STATUS OF RECOMMENDATION

	Response Should Cover:			
Addressee	Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues*
ASD(FM&P)	X	X	X	M

* M = monetary benefits

D. Relocating the Navy's Undergraduate Helicopter Pilot Training Program

Resources dedicated to UHPT pilots were not being effectively used. This condition occurred because the Army and Navy were each operating a training facility. Relocating the Navy's UHPT program to the Army Aviation Center at Fort Rucker, Alabama, would relieve ground and air traffic congestion at the Naval Air Station at Whiting Field, Florida, and eliminate inefficiencies associated with maintaining separate Army and Navy UHPT facilities. Relocation of Navy UHPT would improve military and civilian flight safety and provide cost avoidance of as much as $79 million over the Future Years Defense Program.

DISCUSSION OF DETAILS

Background

Previous reviews. Numerous reviews have been made regarding relocation of Navy UHPT (Appendix C). With one exception, all of the previous reviews and audits concluded that it was feasible and cost-effective to consolidate all DoD UHPT programs at the Army Aviation Center at Fort Rucker. As a result of a 1970 review, the Air Force transferred its UHPT program to Fort Rucker.

The President's budgets for FYs 1977 through 1980 proposed consolidating all Defense UHPT into a single program conducted by the Army at Fort Rucker. Despite testimonial endorsement by the Secretary of the Navy, the Chief of Naval Operations, and the Commandant of the Marine Corps supporting the consolidation action, Congress continually voted against the budget proposals and directed continuation of the separate Navy program.

DMR 962. DMR 962 again proposed consolidation of all DoD UHPT at the Army Aviation Center. The DMR proposal postulated that cost avoidance would result from each Service accepting a similar, although not identical, training program and from eliminating duplicate training facilities, manpower, aircraft, simulators, and maintenance. Further, the proposed consolidation would also alleviate airspace congestion at Whiting Field.

Air Safety Concerns

Military and civilian flights departing from continguous airfields in the Florida panhandle restrict aircraft operations at Whiting Field. The Navy has recognized this condition as a potential safety hazard. In a March 20, 1991, memorandum, the Commander, Naval Safety Center, indicated that Navy activities reported 789 near midair collisions during Calendar Years 1986 through 1990. The Naval Air Station, Whiting Field, and nearby

Naval Air Station, Pensacola, accounted for 312 (40 percent) of the 789 reported incidents.

A draft copy of "Naval Aviation Training Systems 2020" prepared by the Chief of Naval Operations to supplement the Masterplan identified several safety related concerns regarding Whiting Field. These concerns included airfield congestion and airspace traffic density. Although the study was never finalized, it stated that Whiting Field was unable to support Navy primary flight training requirements for practice touch and go landing operations because of traffic density. In addition, the Joint Statement of Operational Need for the Navy JPATS stated that air congestion at Whiting Field would be partially alleviated by the primary flight trainer replacement aircraft. Specifically, the Navy JPATS would be required to perform at an operational flight ceiling sufficient to avoid civilian air traffic.

Contrary to the situation at Whiting Field, encroachment of military airspace by civil aviation is not a problem at Fort Rucker. Relocation of the Navy UHPT program and its fleet of 140 helicopters would reduce the number of aircraft operating at Whiting Field. Furthermore, if the Navy fixed-wing qualification requirement for helicopter pilots were eliminated, the number of aircraft operating out of Whiting Field would be reduced by an additional 120 T-34C fixed-wing aircraft.

Physical Plant at Fort Rucker

In February 1985, the General Accounting Office (GAO) briefed the Senate Armed Services Committee on the results of its "Review of the Feasibility of Consolidating Undergraduate Helicopter Pilot Training Under the Army at Fort Rucker, Alabama." GAO concluded that consolidation of Navy UHPT was not cost-effective because physical plant expansion would be required at Fort Rucker. However, GAO's conclusion is no longer valid. When DMR 962 was being prepared, the Army Aviation Center at Fort Rucker showed that it had the capacity to train 2,400 UHPT students annually. In FY 1989, the Army graduated 2,156 Army, Air Force, and international students from its UHPT program at Fort Rucker. As a result of DoD force structure reductions, the Services project that between 2,000 and 2,100 students will require UHPT beginning in FY 1992. Accordingly, the Army Aviation Center can accommodate all future DoD UHPT requirements.

Navy's Response to DMR 962

The Navy's response to DMR 962 did not objectively address the cost-effectiveness or feasibility of combining all DoD UHPT at Fort Rucker. Instead, the Navy's response was based on unfounded assumptions. Specifically, the Navy believed that TH-57 trainer helicopters and simulators would not be transferred to Fort Rucker, and that the Navy unique shipboard landing qualification requirement currently satisfied by a training barge could not be accommodated at Fort Rucker. The Navy also believed that air and ground congestion at Whiting Field was overstated. In addition, the Navy implied that the DMR proposal was not a productive exercise since Congress had rejected earlier attempts to consolidate DoD UHPT at Fort Rucker.

TH-57 trainer helicopter. The Army OH-58 helicopter is a companion aircraft to the Navy TH-57 helicopter. The Army maintenance contractor can maintain the TH-57's and simulators in addition to the Army's fleet of 113 OH-58A and OH-58C helicopters. This, combined with the fact that ample hangar and parking space exists at Fort Rucker, led us to believe that it was feasible to transfer the Navy fleet of 140 TH-57 trainer helicopters and simulators to the Army Aviation Center to satisfy Navy unique UHPT requirements.

Helicopter Landing Trainer barge. The Navy uses the Helicopter Landing Trainer barge to conduct helicopter shipboard landing qualifications. This barge is located within a 1-hour flight of Fort Rucker. Accordingly, in the event that an acceptable alternative to the barge cannot be developed at Fort Rucker, we believe that Navy shipboard landing qualifications could continue to be accomplished using the barge at its present location with appropriate curriculum adjustments to cross-country flight hours.

Safety concerns. The Navy has recognized airfield and airspace safety concerns at Whiting Field in Navy Safety Center midair collison reports and in documentation supporting the need for the Navy JPATS aircraft. The Navy's rebuttal to DMR 962 de-emphasizes these safety concerns by stating that helicopter operations in the Whiting Field area do not contribute to airspace requirements. Nevertheless, safety is a priority, and eliminating helicopter operations will reduce airfield congestion and airspace traffic density, thereby enhancing flight safety at Whiting Field.

Congressional action. The Navy is correct in its assertion that Congress rejected earlier attempts to consolidate DoD UHPT programs at Fort Rucker. The proposed consolidation will reduce program costs and still satisfy the Services' UHPT requirements. Because of the need to reduce DoD's overall budget, we believe that Congress may now view the proposed consolidation more favorably.

Cost Avoidance

Combining DoD UHPT programs at Fort Rucker will allow cost avoidance resulting from economies of scale. The additional Navy workload will provide increased opportunities for maintenance and inventory efficiencies. Unit costs for aircraft maintenance and logistics could be reduced when the Navy TH-57 helicopters are supported by the Army's maintenance contractor.

Additional cost avoidance is possible if the Navy and Marine Corps use the Army's contracted UHPT instructor pilots. The contractor for pilot instruction is reimbursed based on the number of students successfully trained within a fixed time frame. As a result, the contractor is financially motivated to minimize student attrition rates to recover its invested manpower costs and earn profits. In FY 1990, attrition rates were 13 percent for Army UHPT students and 19 percent for Navy and Marine Corps UHPT students.

Total cost avoidance that can be achieved by relocating Navy and Marine Corps UHPT to Fort Rucker cannot be precisely determined without actually operating a joint program. However, cost comparisons show that the Navy spent $24,000 more per student for TH-57 helicopter training than the Army. Extending the cost difference over the Future Years Defense Program provides possible cost avoidance of as much as $79 million (550 annual helicopter pilot production rate X $24,000 difference X 6 years).

Consolidation of Navigator Training Within DoD

In 1975, the Services combined their navigator training programs at Mather Air Force Base in California. Under this consolidation, the Services provide separate instruction to their navigator students and share common facilities, instructors, and aircraft. This arrangement has proven to be cost-effective and satisfied each Service's navigator training requirements.

Conclusion

The DMR proposal to consolidate all UHPT at Fort Rucker has merit. Relocation of the Navy's UHPT program to Fort Rucker will relieve air safety concerns at the Naval Air Station at Whiting Field, and eliminate cost inefficiencies associated with maintaining two separate Army and Navy UHPT training facilities.

RECOMMENDATION, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to consolidate all DoD Undergraduate Helicopter Pilot Training at the Army Aviation Center at Fort Rucker, Alabama.

Assistant Secretary of Defense (Force Management and Personnel) comments. The Assistant Secretary nonconcurred with Recommendations D. stating that the audit analysis did not provide sufficient rationale to support the recommendation. He believed that the audit analysis attempted to compare dissimilar programs and did not provide a complete picture of costs and benefits as demonstrated by the position differences between the Inspector General and the Navy.

The Assistant Secretary did not take a position concerning whether the proposed consolidation would improve military and civilian flight safety. Instead, he acknowledged that consolidation would reduce flight operations density at Naval Air Station, Whiting Field, Florida, and contribute to improved flight safety. He also acknowledged the Navy's argument that there would be increased congestion at Fort Rucker with a potential reduction in flight safety there.

In addition, the Assistant Secretary also questioned the estimated monetary benefits from relocation because the audit analysis assumed that the number of weeks and flying hours for the Navy's UHPT program would be reduced to the same number of weeks and flying hours used in the Army's UHPT program at Fort Rucker. He also stated that the audit analysis did not address costs of relocating the Navy's TH-57 aircraft and associated simulators to Fort Rucker.

Accordingly, the Assistant Secretary believed that the Inspector General should have recommended that an objective comprehensive study be conducted by an independent organization in lieu of the draft report recommendation to consolidate all DoD UHPT at Fort Rucker. He stated that study objectives should examine opportunities for redesigning helicopter training programs, consider a core curriculum for all Army and Navy helicopter training, highlight legitimate Service-unique requirements that could be examined and costed separately, and address the possibility of using a common training helicopter.

Audit response. We agree with the Assistant Secretary's assertion that the audit analysis compared UHPT programs that were implemented differently by the Services and did not identify all costs and benefits associated with consolidation of all DoD UHPT at Fort Rucker.

However, we do not agree with the Assistant Secretary's conclusion that the audit analysis did not provide sufficient rationale to support the recommendation.

We agree that there would be increased air traffic at Fort Rucker as a result of consolidation of DoD UHPT programs. However, there would be minimal ground congestion and limited infringement on commercial air space for UHPT at Fort Rucker as compared with the Navy's UHPT at Whiting Field. There would be minimal ground congestion because Fort Rucker has 5 main base fields, 17 stage fields, and approximately 150 remote training sites. In respect to air congestion, Fort Rucker does not infringe on commercial air space.

We acknowledged that total cost avoidance that can be achieved by relocating the Navy's UHPT program to Fort Rucker could not be precisely determined without actually operating a joint program. In this regard, we estimated cost avoidance of as much as $79 million over the Future Years Defense Program if the Navy implemented a UHPT program that was comparable to the Army's UHPT program. We qualified the amount in recognition of decisions that need to be made by the Army and Navy concerning plans for blending personnel, aircraft, and training assets and by the Navy concerning UHPT curriculum changes. As stated in the management comments, the estimated cost avoidance will also be offset by one-time relocation costs related to relocating the Navy's TH-57 aircraft and associated simulators to Fort Rucker.

Although we appreciate the Assistant Secretary's apprehension to act on the recommendation, the performance of a more comprehensive study as suggested will not alter the fact that relocation of the Navy's UHPT program to Fort Rucker will relieve air safety concerns at Whiting Field and eliminate inefficiencies associated with maintaining two separate Army and Navy UHPT training facilities. In order to implement the recommendation, the suggested studies will have to be performed. Therefore, we request that the Assistant Secretary reconsider his position when responding in the final report.

Navy comments. The Navy also commented on Recommendation D. The complete texts of the Navy comments and our audit response addressing relocation are contained in Part IV.

STATUS OF RECOMMENDATION

	Response Should Cover:			
Addressee	Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues*
ASD(FM&P)	X	X	X	M

* M = monetary benefits

PART III - ADDITIONAL INFORMATION

Appendix A - Navy and Air Force Trainer Aircraft
Appendix B - Replacement Aircraft Proposed in the DoD 1989 Trainer Aircraft Masterplan
Appendix C - Prior Audits and Studies Related to Undergraduate Pilot Training
Appendix D - Replacement Aircraft Requirement Determinations
Appendix E - Aircraft Proposed in the DoD 1989 Trainer Aircraft Masterplan
Appendix F - Capitalized Interest Cost Avoidance Resulting from Delaying The Air Force Bomber-Fighter Training System for Twenty Years
Appendix G - Enhanced Flight Screener Economic Analysis Prepared by the Inspector General
Appendix H - Summary of Potential Benefits Resulting from Audit
Appendix I - Activities Visited or Contacted
Appendix J - Report Distribution

APPENDIX A: NAVY AND AIR FORCE TRAINER AIRCRAFT

Trainer Aircraft	Replacement Trainer Aircraft	Description
T-34C	JPATS	The T-34C "Turbo-Mentor" was introduced in 1976 and was the first aircraft flown by all student aviators. The T-34C was procured over an 18-year period with the last 19 aircraft delivered in 1990. All students fly 66 hours during primary flight training and, except for Strike and E2/C2 training, an additional 26 hours during intermediate flight training.
TH-57B/C	None	The TH-57 "Sea Ranger" was introduced into the helicopter pipeline in 1968. The TH-57 is a single-engine, dual-seat helicopter used for all the Navy's undergraduate rotary-wing training. Students selected for rotary-wing training fly a total of 116 hours.
T-44A	None	The T-44A "Pegasus" entered service in 1975. The T-44A is a modified version of the Beechcraft C-90 "King Air" twin-engine turboprop aircraft and is used for training students in the advanced maritime and E2/C2 training pipelines. Students selected for the maritime pipeline fly 88 hours, and those students selected for the E2/C2 pipeline fly 34 hours in the T-44A.
T-2B/C	T-45A "Goshawk"	The T-2B/C "Buckeye" commenced service in 1969. It is a tandem seat, twin-engine aircraft that is used to transition students from the T-34C turboprop to high performance jet aircraft. Students selected for the strike pipeline fly 100 hours, and those students selected for the E2/C2 pipeline fly 104 hours.

APPENDIX A: NAVY AND AIR FORCE TRAINER AIRCRAFT (cont'd)

Trainer Aircraft	Replacement Trainer Aircraft	Description
TA-4J	T-45A "Goshawk"	The TA-4J "Skyhawk" first entered service in 1969. The TA-4J is a tandem seat, single-engine, high performance jet trainer used for advanced Strike Pilot training. Those students selected for the strike pipeline fly 92 hours.
T-45A	Strike Training System (STS) or BFTS	The T-45A "Goshawk" will enter service in 1993. It will replace both the T-2B/C intermediate and TA-4J advanced strike trainer aircraft. The T-45A is a two-place, single-engine, light jet trainer aircraft derived from the British Aerospace "Hawk." It is anticipated that students selected for the strike pipeline will fly 192 hours, and those students selected for the E2/C2 pipeline will fly 104 hours.
T-37	JPATS	The T-37 "Tweet" became operational in 1956. The T-37 was the first jet trainer used by the Air Force for primary flight instruction of all students. The T-37 is a dual-engine, side-by-side cockpit aircraft. All undergraduate pilot trainees fly at least 80.9 hours.
T-38A	BFTS and Tanker-Transport Training System	The T-38 "Talon" first entered service in 1961. The T-38A is a dual-engine, tandem seat, high performance jet trainer used for advanced UPT. The Generalized Undergraduate Pilot Training curriculum requires that all students fly 108.8 flight hours. When the Air Force implements Specialized Undergraduate Pilot Training, students selected for the Bomber-Fighter track will continue to use the T-38A. These Bomber-Fighter track students will then fly 119 hours.

APPENDIX B: REPLACEMENT AIRCRAFT PROPOSED IN THE DOD 1989 TRAINER AIRCRAFT MASTERPLAN

Description	Planned Delivery Date	Replacement Aircraft			Cost (Thousands)
		Navy	Air Force	Total	
Joint Primary Aircraft Training System	FYs 1997 through 2009	350	538	888	$ 4,440,000
Tanker-Transport Training System	FYs 1991 through 1998	0	211	211	1,279,563
Bomber-Fighter Training System	FYs 2005 through 2022	398	417	815	7,363,525
T-45A "Goshawk" Training System	FYs 1993 through 2001	300	0	300	4,500,000
Totals		1,048	1,166	2,214	$17,583,088

APPENDIX C: PRIOR AUDITS AND STUDIES RELATED TO UNDERGRADUATE PILOT TRAINING

GAO Report No. NSIAD-89-94 (OSD Case No.7864), "TRAINER AIRCRAFT, Plans to Replace Existing Fleet," March 1989. The House and Senate Committees on Appropriations tasked GAO with evaluating the Air Force's 1988 Trainer Aircraft Masterplan to determine the validity and soundness of Air Force recommendations for replacing T-37 and T-38 trainer aircraft. GAO concluded that by modifying existing aircraft and not procuring replacement aircraft for Specialized Undergraduate Pilot Training, the Air Force could reduce budget requirements by $1 billion over 8 years. No recommendations were made.

GAO Review Code No. 391024, "Review of Feasibility of Consolidating Undergraduate Helicopter Pilot Training Under the Army at Fort Rucker, Alabama," February 1985. GAO evaluated the feasibility of consolidating DoD UHPT at the Army Aviation Center at Fort Rucker, Alabama. The auditors concluded that consolidation would not be cost-effective because physical plant expansion would be required at Fort Rucker. No report was issued, and no recommendations were made. However, GAO briefed the Senate Armed Services Committee on its conclusions on February 1, 1985.

GAO Report No. FPCD-79-88 (OSD Case No. 5292-A), "Undergraduate Helicopter Pilot Training: Consolidation Could Yield Significant Savings" (FPCD-79-88), September 20, 1979. GAO evaluated the DoD, Department of the Army, and Department of the Navy savings calculations included in the "Report of the Department of Defense Study of Undergraduate Helicopter Pilot Training (UHPT) Consolidation at the Army Aviation Center, Fort Rucker, Alabama," April 1977. GAO concluded that significant savings would be possible from a consolidation of UHPT. Cost avoidance was estimated at $63.3 million for FY's 1980 through 1984. No recommendations were made.

GAO May 1977 Letter Report Addressed to the Chairman of the House Appropriations Committee. The GAO validated savings calculations in the April 1977 "Report of the Department of Defense Study of Undergraduate Helicopter Pilot Training (UHPT) Consolidation." GAO supported consolidation of UHPT at the Army Aviation Center, Fort Rucker, Alabama. No recommendations were made.

GAO Report No. B-157905, "Need To Assess Potential For Consolidating Undergraduate Helicopter Pilot Training, Department of Defense," May 3, 1974. GAO evaluated the potential for consolidation of UHPT in DoD. GAO concluded that the cost of undergraduate training could be reduced by requiring that the Navy discontinue fixed-wing training and consolidate all helicopter training at a single site. GAO recommended that the Secretary of Defense consider directing the Navy to discontinue fixed-wing training and move toward consolidating undergraduate training at one site under a joint all helicopter program.

DoD, "Report of the Department of Defense Study of Undergraduate Helicopter Pilot Training (UHPT) Consolidation," April 1977. DoD responded to a congressional request to prepare a report on the feasibility of consolidating DoD UHPT. The report recommended that all DoD UHPT be consolidated into an all rotary-wing program to be conducted by the Army at Fort Rucker, Alabama. DoD estimated that cost avoidance of $104 million for FY's 1978 through 1982 could be obtained through consolidation.

Interservice Training Review Organization, At the request of the Office of the Secretary of Defense, the Interservice Training Review Organization studied the issue of consolidation of UHPT in 1975. The Interservice Training Review Organization concluded that significant commonality existed between the Army and Navy UHPT programs, and that significant savings would result from consolidation. The senior Interservice Training Review Board did not provide any formal recommendations.

Defense Audit Service Report No. 870, "Report on the Review of Projected Savings from Consolidation of Helicopter Training," March 23, 1978. The auditors evaluated and reconciled the differences between the Army and the Navy projected savings from consolidation of UHPT as proposed in the "Report of the Department of Defense Study of Undergraduate Helicopter Pilot Training (UHPT) Consolidation," April 1977. The auditors concluded that potential net savings of $80 million to $124 million were possible for FYs 1979 through 1983 from consolidation of UHPT.

Naval Audit Service Report No. 038-S-91, "T-45A Aircraft Acquisition," April 29, 1991. The auditors validated data to be used at the Defense Acquisition Board meeting for determining the progress made in correcting T-45A deficiencies and to determine whether the Navy's identified numerical requirements for T-45A aircraft were accurate. The auditors concluded that given the extent of the aircraft's design deficiencies and delays in testing, the planned procurement for FY's 1991 and 1992 should be restructured and associated funding of about $766 million should be reprogrammed. The auditors also concluded that the quantity of T-45A aircraft required to train undergraduate jet pilots was estimated using inaccurate planning factor data. As a result of using the inaccurate data, the Navy could reduce T-45A out-year funding requirements by about $559 million if acquisition baselines were correctly adjusted. The audit report recommended that the T-45A aircraft acquisition schedule be rebaselined to permit completion of operational testing before going beyond low-rate initial production. The report also recommended that fatigue and service-life data be analyzed to validate the need to replace the T-2C and TA-4J aircraft, determine the total cost of extending T-2C and TA-4J service lives to support training beyond FY 2000, and inform the Defense Acquisition Board of changes in the urgency of T-45A deliveries. In addition, the audit report recommended that the T-45A baseline, planning, and budgeting objectives be revised to reflect a reduction in T-45A requirements from 300 to 254 aircraft.

APPENDIX D: REPLACEMENT AIRCRAFT REQUIREMENT DETERMINATIONS

	JPATS		TANKER-TRANSPORT	BFTS		T-45A
	NAVY	AIR FORCE	AIR FORCE	NAVY	AIR FORCE	NAVY
Masterplan						
Projected Annual Student Production Requirements	1,500	1,890	1,021	475	650	475
Trainer Aircraft Requirement	350	538	211	398	417	300
Ratio: Aircraft Per Student	.23	.28	.21	.84	.64	.63
Revised Requirements						
Projected Annual Student Production Requirements	1,400	1,400	767	410	570	410
Trainer Aircraft Requirement 1/	322	392	161	345	365	258
Computed Differences						
Projected Annual Student Production Requirements	100	490	254	65	80	65
Trainer Aircraft Requirement	28	146	50 2/	53	52	42

1/ Aircraft-per-student ratio times revised annual student production requirements.

2/ The trainer aircraft difference is now 30 as a result of a subsequent Air Force requirement reduction from 211 to 191 aircraft.

APPENDIX E: AIRCRAFT PROPOSED IN THE DOD 1989 TRAINER AIRCRAFT MASTERPLAN

Training System	Number of Aircraft	Unit Cost	Cost Avoidance (Thousands) FY 1992 through FY 1997	After FY 1998	Total
Air Force					
Tanker-Transport	30	$ 4,069*	$122,057	-	$ 122,057
Joint Primary Aircraft	146	$ 5,000	-	$ 730,000	730,000
Bomber-Fighter	52	$ 9,035	-	469,820	469,820
Subtotal	228		$122,057	$1,199,820	$1,321,877
Navy					
Joint Primary Aircraft	28	$ 5,000	-	$ 140,000	$ 140,000
Bomber-Fighter	53	$ 9,035	-	478,855	478,855
T-45A "Goshawk"	42	$15,000	$630,000	-	630,000
Subtotal	123		$630,000	$ 618,855	$1,248,855
Total	351		$752,057	$1,818,675	$2,570,732

* Cost of these 30 aircraft was determined from contract F33657-89-0002, lots 5 and 6.

APPENDIX F: CAPITALIZED INTEREST COST AVOIDANCE RESULTING FROM DELAYING THE AIR FORCE BOMBER-FIGHTER TRAINING SYSTEM FOR TWENTY YEARS

(Dollars in Thousands)

Fiscal Year	Air Force 1/ Bomber Fighter Aircraft	Procurement 2/ Amount In FY 1989 Dollars	Inflation Factor (3.5% per year)	Procurement Amount In Then Year $	Annualized Interest At 8%	Future Value Of Annuity Invested At 8% For 20 Years	Interest Cost Avoidance
2005	1 through 20	$180,700	1.7340	$ 313,331	$ 25,067	45.7620	$ 1,147,092
2006	21 through 50	271,050	1.7947	486,447	38,916	45.7620	1,780,861
2007	51 through 80	271,050	1.8575	503,472	40,278	45.7620	1,843,191
2008	81 through 110	271,050	1.9225	521,094	41,688	45.7620	1,907,703
2009	111 through 160	451,750	1.9898	898,887	71,911	45.7620	3,290,787
2010	161 through 210	451,750	2.0594	930,348	74,428	45.7620	3,405,965
2011	211 through 260	451,750	2.1315	962,910	77,033	45.7620	3,525,174
2012	261 through 310	451,750	2.2061	996,612	79,729	45.7620	3,648,555
2013	311 through 360	451,750	2.2833	1,031,494	82,519	45.7620	3,776,254
2014	361 through 410	451,750	2.3632	1,067,596	85,408	45.7620	3,908,423
2015	411 through 417	63,245	2.4460	154,695	12,376	45.7620	566,330
	Totals	$3,767,595		$7,866,886	$629,353		$28,800,335

1/ Aircraft delivery schedule outlined in the Masterplan.

2/ Procurement estimate based on Air Force Training Command Response to DMR Decision 962 proposal on T-1A cancellation, September 6, 1990.

APPENDIX G: ENHANCED FLIGHT SCREENER ECONOMIC ANALYSIS PREPARED BY THE INSPECTOR GENERAL

Description	Air Force	Audit Results	Variance
Investment			
FY 1992	$ 8,400,000	$ 8,400,000	-
FY 1993	12,100,000	12,500,000	$(400,000)
FY 1994	6,400,000	6,800,000	(400,000)
Total Investment	$26,900,000	$27,700,000	$(800,000)
Cost Avoidance			
FY 1992	$ 4,509,718	$ 240,923	$ 4,268,795
FY 1993	4,677,782	866,185	3,811,597
FY 1994	4,833,841	1,494,168	3,339,673
FY 1995	4,985,899	1,757,346	3,228,553
FY 1996	5,141,958	1,818,853	3,323,105
FY 1997	5,298,018	1,882,513	3,415,505
Total Cost Avoidance	$29,447,216	$8,059,988	$21,387,228

APPENDIX H: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.1.a.	Economy and Efficiency. The Navy can reduce the number of T-45A "Goshawk" aircraft to be procured from 300 to 258 in support of Navy advanced undergraduate "strike" pilot training. The Air Force can reduce the number of T-1A "Jayhawk" aircraft to be procured from 191 to 161 in support of Specialized Undergraduate Pilot Training for Tanker-Transport Training pilots.	Funds Put to Better Use. The Navy could avoid up to $630 million in procurement costs over the Future Years Defense Program. The Air Force could avoid up to $122 million in procurement costs over the Future Years Defense Program.
A.1.b.	Economy and Efficiency. Reduced contracting costs will result from assessing alternative approaches to satisfying the basis of need or requirement.	Undeterminable.
A.1.c.	Economy and Efficiency. Reduced contracting costs will result from combined requirements for Army and Navy trainer helicopter replacements.	Undeterminable.

APPENDIX H: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (cont'd)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.2.	Economy and Efficiency. The Navy could reduce the number of T-45A "Goshawk" aircraft to be procured and increase the number of Navy JPATS aircraft to be procured based on results of the Navy Primary Aircraft Training System Concept Study being performed by the Naval Air Systems Command.	Undeterminable.
A.3.	Economy and Efficiency. The Air Force can defer procurement of the Tanker-Transport Training System and Bomber-Fighter Training System until FY 2010, if PACER CLASSIC modification funding is continued for the T-38 aircraft.	Undeterminable.
A.4.	Economy and Efficiency. The Air Force can terminate T-38 PACER CLASSIC modifications if a decision is made to continue the procurement of Tanker-Transport Training System T-1A aircraft and the Bomber-Fighter Training System beginning in FY 2005 rather than delaying this procurement until FY 2025.	Funds Put to Better Use. The Air Force could avoid up to $495 million in modifications, initial spares, sustaining engineering, and depot repair/ modifications over the Future Years Defense Program.

APPENDIX H: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (cont'd)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.5.	Internal Control. Helps ensure implementation of Recommendation A.4.	Included Above.
B.1.	Economy and Efficiency. The Air Force can reduce procurement costs by canceling its proposed procurement of 125 Enhanced Flight Screener aircraft.	Funds Put to Better Use. The Air Force could avoid as much as $28 million in procurement costs over the Future Years Defense Program.
B.2.	Internal Control. Ensure that justifications for training aircraft analyze alternatives and that cost analyses demonstrate expected economic benefits of proposed actions when compared to alternatives.	Included Above.
C.	Economy and Efficiency. The Navy can reduce operation and maintenance costs by eliminating its fixed-wing qualification requirement for rotary-wing pilots.	Funds Put to Better Use. The Navy could avoid as much as $300 million in operation and maintenance costs over the Future Years Defense Program.

APPENDIX H: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT (cont'd)

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
D.	Economy and Efficiency. The Navy can reduce operation and maintenance costs by relocating and combining its UHPT programs at the Army Aviation Center, Fort Rucker, Alabama.	Funds Put to Better Use. The Navy could avoid as much as $79 million in operation and maintenance costs over the Future Years Defense Program.

APPENDIX I: ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Office of the Under Secretary of Defense for Acquisition, Washington, DC
Office of the Assistant Secretary of Defense (Force Management and Personnel), Washington, DC
Office of the Assistant Secretary of Defense (Program Analysis and Evaluation), Washington, DC
Office of the Comptroller of the Department of Defense, Washington, DC

Department of the Army

Office of the U.S. Army Deputy Chief of Staff for Operations and Plans, Washington, DC
U.S. Army Training and Doctrine Command, Fort Monroe, VA
U.S. Army Aviation Center, Fort Rucker, AL
U.S. Army Audit Agency, Washington, DC

Department of the Navy

Headquarters, United States Marine Corps, Arlington, VA
Assistant Chief of Naval Operations (Air Warfare), Washington, DC
Naval Air Systems Command, Arlington, VA
Naval Military Personnel Command, Washington, DC
Chief of Naval Education and Training, Pensacola, FL
Chief of Naval Air Training, Corpus Christi, TX
Naval Air Development Center, Warminster, PA
Naval Safety Center, Norfolk, VA
Naval Aerospace Medical Research Laboratory, Pensacola, FL
Naval Audit Service, Southeast Region, Pensacola, FL

Department of the Air Force

Headquarters, Air Force Logistics Command, Wright-Patterson Air Force Base, OH
Headquarters, Air Training Command, Randolph Air Force Base, TX
Headquarters, Military Airlift Command, Scott Air Force Base, IL
Aeronautical Systems Division, Wright-Patterson Air Force Base, OH
U.S. Air Force Military Manpower Personnel Center, Randolph Air Force Base, TX
323D Flying Training Wing, Mather Air Force Base, CA
U.S. Air Force Audit Agency, Norton Air Force Base, CA

APPENDIX J: REPORT DISTRIBUTION

Office of the Secretary of Defense

Deputy Secretary of Defense
Under Secretary of Defense for Acquisition
Assistant Secretary of Defense (Force Management and Personnel)
Assistant Secretary of Defense (Program Analysis and Evaluation)
Assistant Secretary of Defense (Public Affairs)
Comptroller of the Department of Defense
Defense Management Report Implementation Coordination Office

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management)
U.S. Army Deputy Chief of Staff for Operations and Plans
U.S. Army Training and Doctrine Command
U.S. Army Aviation Center
Auditor General, U.S. Army Audit Agency

Department of the Navy

Secretary of the Navy
Commandant of the Marine Corps
Assistant Secretary of the Navy (Financial Management)
Headquarters, United States Marine Corps
Assistant Chief of Naval Operations (Air Warfare)
Chief of Naval Education and Training
Chief of Naval Air Training
Auditor General, Naval Audit Service

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Aeronautical Systems Division
Headquarters, Air Training Command
Headquarters, Air Force Logistics Command
Auditor General, Air Force Audit Agency

Other DoD Activities

Director, Defense Logistics Agency
Director, Defense Logistics Studies Information Exchange

Non-DoD Activities

Office of Management and Budget
U.S. General Accounting Office, NSIAD Technical Information Center

Congressional Committees:

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Ranking Minority Member, Senate Committee on Armed Services
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
Ranking Minority Member, House 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 AND AUDIT RESPONSE

Assistant Secretary of Defense (Force Management and Personnel)
Deputy Director of Defense Research and Engineering (Tactical Warfare Programs)
Deputy Comptroller of the Department of Defense (Program/Budget)
Department of the Army
Department of the Navy
Department of the Air Force
Audit Response to Navy Comments

Comments from the Assistant Secretary of Defense(Force Management and Personnel)

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON D C 20301-4000

FORCE MANAGEMENT AND PERSONNEL

DEC 30 1991

MEMORANDUM FOR THE INSPECTOR GENERAL

SUBJECT: FM&P Comments on the Draft Report on the Audit of Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (Project No. 1AS-0001)

Thank you for the opportunity to comment on this draft report. It has provided a number of useful insights into several important undergraduate pilot training issues. While my detailed comments on each of the proposed recommendations are attached, I would like to highlight three specific issues: the DoD Trainer Aircraft Masterplan, fixed-wing training for Navy and Marine Corps helicopter pilots, and consolidating Navy and Army helicopter training at Ft Rucker, Alabama

I agree with the report's recommendation to update the DoD Trainer Aircraft Masterplan This is clearly an important need. I also agree that helicopter training should be addressed in the Masterplan Doing so might help us resolve some helicopter training issues that have gone unresolved for many years. Please note, however, that the Department has already adjusted many trainer aircraft programs in response to the current drawdown and is in the process of adjusting further. Therefore, I would caution against recommending that we stop or delay programs until the Masterplan can be updated. The costs of such actions could, in some cases, outweigh the benefits we achieve.

The report's recommendations to eliminate fixed-wing training for Navy helicopter pilots and to consolidate Navy and Army helicopter training at Ft. Rucker are appealing. From an analytical perspective, however, the report does not provide sufficient rationale to allow me to support either proposal Although I have not concurred with your proposals, I have recommended that you call for a study that would give us the background to make such decisions. I encourage and support your efforts to continue pursuing a solution to these difficult issues.

Again, thank you for the opportunity to comment. Please feel free to contact me or my staff should you have any questions My point of contact is Major Tom Lorimer at x59425.

Christopher Jehn

Attachment
As stated

FM&P Comments on Recommendations Proposed
by the DoD IG Audit Report on the Acquisition of Common Aircraft
for Navy and Air Force Undergraduate Pilot Training

Finding A

DEPARTMENT OF DEFENSE 1989 TRAINER AIRCRAFT MASTERPLAN

Recommendation #1: We recommend that the Under Secretary of Defense for Acquisition and the Secretaries of the Military Departments prepare a new Department of Defense Trainer Aircraft Masterplan that:

a. Recognizes decreased Service annual undergraduate pilot training rates and ongoing aircraft modifications by reducing planned numbers of Tanker-Transport Training System aircraft, Joint Primary Training System aircraft, Bomber-Fighter Training System Aircraft, and T-45A aircraft, as indicated in Appendix E.

FM&P Comments: Partially concur.

We agree that the existing Department of Defense Trainer Aircraft Masterplan needs updating. We--like the Services--view the Masterplan as a strategy document rather than a purchasing plan. OSD and the Services have already adjusted to the current drawdown, decreasing the number of aircraft they intend to purchase, delaying some new aircraft programs and cancelling others. The Department has not relied exclusively on specific numbers of aircraft and exact timeframes outlined in the Masterplan, but has used the Masterplan as a reference point for making decisions and adjustments.

b. Examines the quality and adequacy of undergraduate pilot training, defines existing and anticipated training deficiencies, demonstrates how new replacement aircraft will enhance training effectiveness, and provides cost-benefit analyses to economically justify acquisition of replacement aircraft.

FM&P Comments: Concur.

c. Addresses Army trainer aircraft replacement requirements.

FM&P Comments: Concur with comments.

Ideally the updated Trainer Aircraft Masterplan should address all the Services' trainer aircraft needs. We would point out, however, that the Army is beginning to purchase the New Training Helicopter (NTH). We suggest that the NTH (and its replacement, if applicable) be included in the next revision.

Recommendation #2: We recommend that the Secretary of the Navy further reduce the T-45A requirements and make appropriate increases in the Joint Primary Aircraft Training System aircraft requirements, when changes are made to the Navy's syllabus as a result of the Navy Primary Aircraft Training System Concept Study.

FM&P Comments: Concur with comments.

As have the other Services, the Navy has already reduced its trainer aircraft requirements. Structural changes in Navy training philosophy may drive further adjustments. As per our earlier comments regarding the intended use of the Masterplan, it is not desirable to delay implementation of the Masterplan's strategy while fine-tuning the numbers.

Recommendation #3: We recommend that the Secretary of the Air Force defer planned procurements of the Bomber-Fighter Training System and Tanker-Transport Training System if PACER CLASSIC modification funding is continued for the T-38 aircraft.

FM&P Comments: Partially concur.

We have no objection to the Air Force's decision to continue with the PACER CLASSIC modifications and defer the Bomber-Fighter Training System until potential follow-on modifications of the T-38 can be evaluated. We do not concur with delaying the Tanker-Transport Training System. (See discussion for Recommendation #5.)

Recommendation #4: In the event that planned procurements of the Bomber-Fighter Training System proceed as planned in the Masterplan, we recommend that the Secretary of the Air Force terminate PACER CLASSIC modification funding for the T-38 aircraft.

FM&P Comments: No longer applicable, since the Air Force has decided to continue the PACER CLASSIC program. See # 3 above.

Recommendation #5: We recommend that the Comptroller of the Department of Defense withhold Tanker-Transport Training System program funding pending the T-38 aircraft PACER CLASSIC modification decision by the Air Force.

FM&P Comments: Do not concur.

The Tanker-Transport Training System (T-1) is not related to the T-38 PACER CLASSIC modification or the proposed replacement for the T-38, the Bomber-Fighter Training System. Both of those aircraft support the fighter/bomber track of Specialized Undergraduate Pilot Training (SUPT), while the T-1 is exclusive to the multi-engine track of SUPT. The current Undergraduate Pilot Training (UPT) curriculum attempts to satisfy diverse and sometimes contradictory requirements. Multi-engine pilots, for example, are taught aerobatics, which are skills they will never use in performing their flying mission. From a training perspective, the new SUPT is an important evolutionary step over the previous UPT--after track selection, all training can be specifically geared to mission requirements. The T-1 is a necessary prerequisite for implementing SUPT as scheduled in June of 1992. Finally, the procurement program for the T-1 is irreversibly underway--43 aircraft have already been purchased and the first T-1s will be delivered next month. The size of the order has already been reduced to conform to the drawdown, and further reviews and adjustments are possible through FY 1995 in the normal program and budget review processes.

Finding B

AIR FORCE ENHANCED FLIGHT SCREENER

Recommendation #1: Cancel plans to acquire the Enhanced Flight Screener.

FM&P Comments: Do not concur. See discussion for Recommendation #2 below.

Recommendation #2: Before approving Statements of Need for training aircraft, require that all alternatives have been analyzed, as required by Directive 5000.1 and that the economic analyses were made in accordance with Instruction 7041.3.

FM&P Comments: Concur with comments.

Recommendations #1 and #2 appear to be contradictory: the Draft Audit faults the Enhanced Flight Screener (EFS) acquisition process for not having an economic analysis but recommends cancellation before one can be completed. FM&P supports having the services adhere to Directives and Instructions, but recognizes that portions of the EFS decision were not handled as formally as necessary. Nevertheless, FM&P believes that an economic analysis should serve as the basis for making a go/no-go decision on the EFS. The Air Force has recently completed a certified economic analysis, and the payback period (7.5 years) are to be acceptable.

Philosophically, FM&P understands the Air Force's desire for a new flight screener. The more sophisticated training airframes coming into the inventory (JPATS, BFTS, or a modified T-38) will make undergraduate pilot training more difficult for prospective students. Further, shrinking resources will increase the benefits of avoiding wash-outs or identifying marginal flying candidates early in the training pipeline. The increased performance of the EFS improves the Air Force's ability to make "predictive" selection decisions. It should also be noted that flight screening is not intended to teach flying skills but rather to present students with unfamiliar flying situations and tasks, and assess their ability to learn. An aerobatic aircraft like the EFS can offer challenges to all students, even those who already have some flying experience. The current screener is limited in this regard.

The DoD IG report faults the Air Force for not evaluating alternatives and suggests that "simple 'desk top' flight training simulators . . . [are] a cost effective alternative for reducing UPT attrition." The report cites a single 1975 Air Force study ("HASTY BLUE") which claimed attrition could be reduced by extensive ground-based pre-testing, without any flight screening at all. The Air Force already uses portions of its Air Force Officer Qualifying Test to screen its flying applicants. In addition, the Air Force plans continue to implement the PORTABAT psycho-motor testing system. It is not clear, however, that these ground-based alternatives or the procedures suggested in the "HASTY BLUE" study are adequate substitutes for hands-on in-flight screening, which can identify problems with air sickness, apprehension, and student desire.

General FM&P Comments Regarding Findings C&D

The recommendation to terminate fixed-wing training for Navy and Marine Corps helicopter pilots and to consolidate all Undergraduate Helicopter Pilot Training (UHPT) at Ft. Rucker remain conceptually attractive proposals. None of the analyses that address these issues, however, has provided sufficient information to support a decision--either positive or negative--on either proposal. FM&P would suggest that an objective comprehensive study be conducted by an independent organization to provide the Deputy Secretary the information he needs to decide on the DoD IG and Comptroller recommendations.

The analyses submitted, while providing useful insights, have made faulty assumptions, did not consider a full range of alternatives, attempted to compare dissimilar programs, or did not include a complete picture of costs and benefits. For example, in order to decide if fixed-wing training should be part of the Navy's UHPT, we need to understand why Navy training is, and should or should not be, different than that provided to Air Force and Army helicopter pilots. We should also determine if the reasons for providing fixed-wing training to Navy pilots could be satisfied by adopting alternative, possibly less expensive, programs--such as using screening programs similar to those used by the Army and Air Force. We might also want to consider contracting for civilian instructors to provide fixed-wing training.

A comprehensive study should examine opportunities for redesigning helicopter training programs--for both Army and Navy. It should consider having a core curriculum that incorporates the common elements of all military helicopter training. It should also highlight legitimate service-unique requirements that could then be

examined and costed separately. In addition, such a study should address the possibility of using a common training helicopter, such as a modified version of the Army's New Training Helicopter (NTH). None of the arguments provided to date has adequately addressed these concerns. Additional comments specific to each of the recommendations are provided below.

Finding C

FIXED-WING TRAINING OF NAVY AND MARINE CORPS HELICOPTER PILOTS

Recommendation #1: We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to eliminate the fixed-wing training requirement for Navy and Marine Corps helicopter students.

FM&P Comments: Do not concur.

The Navy uses initial fixed-wing training in its Undergraduate Pilot Training Program to serve two basic functions: first, to facilitate screening of potential pilots into jet, propeller, and helicopter pipelines; and second, to provide initial skill training in low-cost aircraft.

The Navy argues that initial fixed-wing screening lowers future student attrition rates in the more-costly portions of advanced flight training, and (implicitly) contributes to reduced pilot training accident rates. Flying-hour costs for the Navy's T-34C fixed-wing trainer are approximately one-third less than those of the TH-57 training helicopter and 70 percent less than those of the Army's UH-1 training helicopter. It is not clear, however, that alternative less-expensive screening techniques could not produce the same results.

The Navy further argues that fixed-wing training allows helicopter pilots to rotate through billets requiring fixed-wing skills subsequent to their first operational helicopter pilot tour. While less than 2 percent of Navy helicopter pilots transition to a fixed-wing career designator, on average 13 percent fill fixed-wing-designated flying billets at any given time. Under current Navy helicopter pilot career management policies, over half of the Navy's helicopter pilots could be assigned to a fixed-wing-designated flying billet over a 20-year career. The Navy has failed to make a convincing case that these needs are sufficient to require fixed-wing training

for all helicopter pilots. Further, alternative ways to fill these fixed-wing-designated billets were not addressed.

The DoD IG Draft Audit indicates that costs of $50M per year could be saved by eliminating the full 27 weeks of fixed-wing training provided to undergraduate helicopter pilots. Over 70 of the Navy's T-34C fixed-wing flight hours directly support helicopter flight training requirements. Elimination of fixed-wing training in the T-34C, however, would likely require increased flying hours in the more expensive TH-57 and could increase the number of TH-57's required. The DoD IG Draft Audit offers no analysis to substantiate this reduction. To accept this recommendation, we would have to assume that the Navy is currently overtraining its prospective helicopter pilots.

The DoD IG Draft Audit also reported a one-time cost avoidance of about $600M to replace the T-34C based on the current Joint Primary Aircraft Training System (JPATS) Masterplan. The audit did not mention that JPATS funds directly associated with the UHPT trainer would not be obligated until FY 2001. Also, the audit did not recognize that the services have already taken significant reductions based on current drawdown plans.

Finding D

RELOCATING THE NAVY'S UNDERGRADUATE HELICOPTER PILOT TRAINING PROGRAM

Recommendation #1: We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to consolidate all Undergraduate Helicopter Pilot Training at the Army Aviation Center at Fort Rucker, Alabama.

FM&P Comments: Do not concur.

The DoD IG Draft Audit proposes consolidation of Army and Navy Undergraduate Helicopter Pilot Training (UHPT) at Ft. Rucker, Alabama based on two factors: first, improvement of military and civilian flight safety; and second, reduction of costs by as much as $13.2M annually. The consolidation would reduce flight operations density at Whiting Field, Florida contributing to improved flight safety. On the other hand, the Navy argues that there would be increased congestion at Ft. Rucker with a potential reduction in flight safety there.

The DoD IG Draft Audit's estimates of cost savings due to consolidation were based on comparing 22 weeks of Navy flight instruction in the TH-57 training helicopter with 20 weeks of flight instruction in the Army's UH-1 helicopter trainer. The comparison ignores the fact that the Navy training is longer by two weeks (10 percent) and includes 34 more flying hours (approximately 30 percent). The postulated savings, therefore, are achieved by assuming a reduction in Navy training. Costs of relocating Navy's TH-57 aircraft and associated simulators were also not addressed.

Comments from the Deputy Director of Defense Research and Engineering (Tactical Warfare Programs)

OFFICE OF THE DIRECTOR OF
DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, DC 20301-3030

21 NOV 1991

MEMORANDUM FOR INSPECTOR GENERAL

SUBJECT: Audit Report on the Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training

Since the Department of Defense submitted the DoD Trainer Aircraft Masterplan to Congress in 1989, the Navy and Air Force force structure has been reduced and aviation career programs have been enhanced, which have impacted the Services' undergraduate pilot training requirements for fixed-wing aircraft. We agree with your audit report recommendation that the Trainer Aircraft Masterplan should be updated to more accurately reflect these changes.

The current Masterplan, however, is still valid as a conceptual plan for fixed-wing pilot training because it meets our objective to provide the DoD strategy for joint-Service acquisition of fixed-wing aircraft training systems. It has been the basis to implement dual-track Specialized Undergraduate Pilot Training (SUPT) in the Air Force--to mirror the Navy process--enabling the future acquisition of a common primary trainer, Joint Primary Aircraft Training System (JPATS), for both Services. The Air Force's acquisition of the Tanker-Transport Training System (TTTS) was the first step in implementing SUPT. This program should not be stopped, as you have suggested.

The DoD Trainer Aircraft Masterplan could be updated next year concurrent with the Services' POM 94 plans so that any further force structure changes could be accounted for in a revised plan. The masterplan could also address helicopter training as well as fixed-wing training. Conceptually, we do not expect the updated masterplan to change our strategy over the next 10 years in the acquisition of fixed-wing trainer assets--TTTS, JPATS, and T-45. As part of the annual budget review process and program milestone reviews, quantities and schedules of these programs have been adjusted periodically to reflect changes in requirements, which is the appropriate mechanism. The masterplan is not intended to be a programming document and updates should only be necessary when significant changes occur.

Comments on your recommendations in Part II of the audit report are attached.

Frank Kendall
Deputy Director
(Tactical Warfare Programs)

Attachment

Detail Comments on DoD IG Draft Audit Report Recommendations for Part IIA. Department of Defense 1989 Trainer Aircraft Masterplan

Recommendation 1.

We recommend that the Under Secretary of Defense for Acquisition and the Secretaries of the Military Departments prepare a new Department of Defense Trainer Aircraft Masterplan that:

a. Recognizes decreased Service annual undergraduate pilot training rates and ongoing aircraft modifications by reducing planned numbers of Tanker-Transport Training System aircraft, Joint Primary Aircraft Training System aircraft, Bomber-Fighter Training System aircraft, and T-45 aircraft, as indicated in Appendix E (attached).

b. Examines the quality and adequacy of undergraduate pilot training, defines existing and anticipated training deficiencies, demonstrates how new replacement aircraft will enhance training effectiveness, and provides cost-benefit analyses to economically justify acquisition of replacement aircraft.

c. Addresses Army trainer aircraft replacement requirements.

USD(A) Comments: Partially Concur

a. Any updated DoD Trainer Aircraft Masterplan would recognize and use the latest revised requirements established by the Services. The numbers in Appendix E may not be appropriate when the masterplan is updated, which is expected to be in 1992, because force structure and other changes are still ongoing in DoD, and are expected to be further addressed in POM 94. It is important to understand clearly that the purpose of the 1989 DoD Trainer Aircraft Masterplan was to provide a strategy for joint-Service acquisition of fixed-wing aircraft training systems in the future, and should not be considered a programming document. Naturally, the information in the plan, when created or updated, should be the most accurate data available.

b. An updated DoD Trainer Aircraft Masterplan would consider each of the items noted by the IG during the generation of the plan. These studies, analyses and trade-offs would be required in order to provide the underpinning necessary to obtain a DoD approved plan. There would be a limit, however, to the amount of information and level of detail actually contained in the plan in order to not degrade its effectiveness and utility.

c. Addressing the Army trainer aircraft requirements, as well as the Navy and Air Force rotary trainer aircraft needs, expands the scope of the DoD Trainer Aircraft Masterplan, which addressed fixed-wing trainer aircraft only. Consolidation of

training assets and facilities might also be considered in any future masterplan in order to arrive at the most cost-effective plan to accomplish undergraduate pilot training.

Recommendation 2.

We recommend that the Secretary of the Navy further reduce the T-45A requirements and make appropriate increases in the Joint Primary Aircraft Training System (JPATS) aircraft requirements, when changes are made to the Navy's syllabuses as a result of the Navy Primary Aircraft Training System Concept Study.

USD(A) Comments: Partially Concur

JPATS is expected to increase the performance capability of the existing primary aircraft training system and, therefore, offers the potential to expand its curriculum coverage. However, until all concept studies are completed and an aircraft is selected from the wide variety of aircraft proposed, the magnitude of training curriculum shifts between the primary trainer and the T-45 intermediate trainer can not be quantified. In addition, the T-45 aircraft may be able to accomplish additional training requirements now allocated to the Fleet Replacement Squadrons (FRS) which should provide corresponding cost savings. Changes in T-45 procurement requirements should consider curriculum changes in both JPATS and FRS training capabilities before the T-45 procurement program is adjusted.

Recommendation 3.

We recommend that the Secretary of the Air Force defer planned procurements of the Bomber-Fighter Training System (BFTS) and Tanker-Transport Training System (TTTS) if PACER CLASSIC modification funding is continued for the T-38 aircraft.

USD(A) Comments: Partially Concur

Concur in deferring the planned procurement of the Bomber-Fighter Training System until it is necessary, based on the service life of the T-38 aircraft--assuming PACER CLASSIC is completed as planned--and updated requirements and performance capabilities are definitized for BFTS.

However, procurement of the Tanker-Transport Training System should not be deferred. TTTS was a vital part in implementing the Trainer Aircraft Masterplan strategy and in enabling Specialized Undergraduate Pilot Training (SUPT) to be used in the Air Force. TTTS will relieve pressure on the T-38 fleet, and with the PACER CLASSIC modification, the T-38 service life has been extended. We are in the third year of TTTS procurement of

191 aircraft; 43 aircraft have been procured through FY91, and FY95 completes the buy. Deferring procurement of TTTS now in the middle of production until its requirements are updated would not be wise. If it is found that fewer TTTS aircraft are required--the requirement is reviewed annually in the budget review cycle--time is available to delete aircraft from the end of the program, which is the economical method to reduce procurement programs.

Recommendation 4.

In the event that planned procurements of the Bomber-Fighter Training System and Tanker-Transport Training System proceed as planned in the Masterplan, we recommend that the Secretary of the Air Force terminate PACER CLASSIC modification funding for the T-38 aircraft.

USD(A) Comments: Partially Concur

The procurement of TTTS and the T-38 PACER CLASSIC service life extension program (SLEP) need to both continue at the present time as planned to provide for Specialized Undergraduate Pilot Training in the Air Force and to meet their training needs past the turn of the century. However, the BFTS, TTTS, and T-38 SLEP programs should be reviewed as a package and each program adjusted as necessary to best meet the expected future undergraduate pilot training requirements.

Recommendation 5.

We recommend that the Comptroller of the Department of Defense withhold Tanker-Transport Training System program funding pending the T-38 aircraft PACER CLASSIC modification decision by the Air Force.

USD(A) Comments: Do Not Concur

As previously stated, the TTTS and T-38 PACER CLASSIC SLEP programs need to continue as planned. We expect to review these programs, along with the Bomber-Fighter Training System, to determine the appropriate adjustments which should be made to each program, based on recent force structure reductions and future undergraduate pilot training needs. Withholding TTTS funding should not be tied to whether or not the Air Force conducts the T-38 PACER CLASSIC modification.

Detail Comments on DoD IG Draft Audit Report Recommendations for Part IIC. Department of Defense 1989 Trainer Aircraft Masterplan

Recommendation 1.

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to eliminate the fixed-wing training requirement for Navy and Marine Corps helicopter students.

USD(A) Comments: Do Not Concur

The claim that the Navy's "undergraduate helicopter pilot training (UHPT) is neither cost-effective nor an efficient use of training time" is not substantiated based upon the current operating costs of the Navy's T-34C and TH-57C training aircraft. The Navy's cost per flight hour in the T-34C ($171) is over $50 less than the TH-57C ($224) which is only 31% of the Army's current cost per flight hour in the UH-1H helicopters ($703). The Navy's T-34C cost per flight hour in the primary phases of UHPT is only 24% of what the Army's cost per flight hour is in the UH-1H for comparable UHPT primary training.

There is a significant difference in training and operational philosophy between the Services with regard to the skills that are necessary to fully train a helicopter pilot. This is primarily due to the major differences in their operational environments. Navy and Marine Corps helicopter flight crews primarily operate in the maritime and amphibious assault environment from a wide variety of surface combatants and with fixed wing strike, strike support and maritime patrol aircraft. The flight skills that naval helicopter pilots learn during the first stages of undergraduate flight training give them valuable experience which enables them to be more fully integrated into combined fixed wing and rotary wing naval operations plus joint operations.

Contrary to the conclusion reached in this section of the DoDIG report, Navy and Marine Corps rotary wing pilots do fly a variety of fixed wing plus rotary wing aircraft during a full military career. The fact that naval rotary wing pilots are "unrestricted" allows the Services more latitude in assigning them based on the needs of the Navy and Marine Corps. While some naval helicopter pilots only fly helicopters after completing UHPT and prior to leaving active duty at the end of their obligated service, many naval helicopter pilots achieve aircraft commander designations in a variety of fixed wing aircraft. The DoDIG's draft report which states the "fixed wing training of undergraduate helicopter students is not cost-effective because less than 2 percent of the graduates transition to fixed-wing operational aircraft" is not an analytical conclusion based upon fact, but rather a judgement made by skewed analysis of available data. Bureau of Naval Personnel records refute that DoDIG statement, although the Navy and Marine Corps do limit the number of pilots who transition from rotary wing tactical aircraft to fixed wing tactical

aircraft. Transitions from the helicopters to fixed wing tactical airplanes are limited by the Services since it is difficult for a pilot to achieve full tactical proficiency in a different community when he or she transitions at the mid-point in his/her career. The Bureau of Naval Personnel's policy is meant to ensure that these carefully selected pilots remain promotable and competitive for selection for aviation command. The small number who are given lengthy transition training are usually graduates of a Test Pilot School where test pilots fly a variety of aircraft ranging from gliders to tactical fixed and rotary wing aircraft. Examples of Navy helicopter pilots who fly both fixed and rotary wing aircraft include the fact that over 30% of the Navy's primary fixed wing flight instructors in the fixed wing T-34C (68 of 224 in VT-2, 3, 6, 27) are helicopter pilots. In those same four Navy primary fixed wing training squadrons, 45% of the T-34C flight instructors are Navy or Marine helicopter pilots (161 of 361 Navy/USMC instructors). Navy personnel records confirm that there are presently 3,540 Navy helicopter pilots and of those 3,540, some 874 are assigned to flying billets ashore where they fly both fixed and rotary wing aircraft. Of the 874 Navy helicopter pilots assigned ashore to flying billets, 468 are currently assigned to non-helicopter designated flying billets. Almost 70% of the flying billets at Naval Air Stations in CONUS and overseas (151 of 220 fixed wing shore billets for second tour aviators) are filled by helicopter pilots who fly both fixed wing and rotary wing aircraft. If these station pilots were only qualified to fly only one type of aircraft, either additional pilots would have to be assigned to these shore billets or prospective station pilots would have to undergo extensive flight training to become qualified to fly another type of aircraft. Navy helicopter pilots now, for example, receive only four weeks of familiarization training in the C-12 model turbo-props enroute to flying billets at Naval Air Stations. That is achievable because all Navy helicopter pilots receive a minimum of 92 flight hours in the fixed wing T-34C during their total of 208 flight hours during UHPT. Elimination of undergraduate fixed wing flight training for naval helicopter pilots would significantly restrict follow-on assignments of naval helicopter pilots to billets requiring both fixed wing and rotary wing flying skills during an era when 37% of all Navy pilots are helicopter pilots and cost more to maintain "restricted" aviators.

Detail Comments on DoD IG Draft Audit Report Recommendations for Part IID. Department of Defense 1989 Trainer Aircraft Masterplan.

Recommendation 1.

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to consolidate all DoD Undergraduate Helicopter Pilot Training at the Army Aviation Center at Fort Rucker, Alabama.

USD(A) Comments: Partially concur.

Prompted by the DoDIG's investigation on rotary wing flight training and the 1990 DMRC 962, the Navy's Chief of Naval Education and Training proposed on July 2, 1991, that the Inter-Service Training Review Organization (ITRO) form a task group of subject-matter experts from all of the Services, jointly chaired by Army and Navy representatives. The task group's charter was to review the potential for and ramifications of inter-Service training of undergraduate helicopter pilot training (UHPT).

On July 25, 1991, an ITRO Task Group commenced a two-phase study which included:

- Phase I (Facilities/Curriculum). This portion of the study was conducted jointly by members of all Services at Fort Rucker, Alabama. This phase concluded with a recommendation to conduct cost analysis on two options, which would satisfy all Services' UHPT training requirements.

- Phase II (Cost Analysis). This phase was conducted by members of all Services at the Army's Training and Doctrine Command (TRADOC) Headquarters at Fort Monroe, Virginia.

The ITRO Task Group completed their study on September 27, 1991. On October 25, 1991, an Inter-Service Training Review Organization Executive Board Meeting was held in San Diego. A joint Army/Navy briefing team presented a detailed facilities/cirriculum/cost analysis briefing on Phase I and II to the three-star flag officer Executive Board. Based upon the joint Service study results, the Task Group concluded that it is not economically feasible to consolidate the Army and Navy UHPT programs. Their recommendation was not to pursue Phase III (Implementation) initiatives. All ITRO members unanimously concurred with the recommendation of the Task Group and agreed that consolidating Army and Navy UHPT would not satisfy individual Service-training objectives nor provide cost efficiencies.

The ITRO cost analysis team evaluated the current operating costs of the Services' training helicopters and trainers. In order to reduce its operating costs, the Army is currently planning to buy or lease a New Training Helicopter (NTH) to replace the Vietnam-era

UH-1H helicopters at Fort Rucker. The Navy, on the other hand, does not need to procure any additional training helicopters to replace the TH-57C until the year 2005. The Army is proceeding through the acquisition and budget process to determine the most cost-effective and affordable alternative to satisfy their NTH requirements with available resources. The Army has already issued a Request For Proposal (RFP) from industry. Although this is an Army ACAT III program that is planned to be a Non-Developmental Item (NDI), there appears to be an opportunity to reduce total acquisition costs to both the Army and Navy. Cost savings are probable by including in the DOD Trainer Aircraft Masterplan an analysis of these options:

1. If the Army decides that the most cost effective acquisition, near-term alternative for the NTH is leasing a training aircraft at Fort Rucker, DOD's purchase of a common joint primary-training helicopter platform could be deferred to coincide with the Navy's need to replace the TH-57C in the year 2005. A joint Army/Navy/Air Force NTH program could be established to satisfy the training needs of all Services.

2. With the planned force level reductions in all of the Services, excess training capacity at the Navy's UHPT site at NAS Whiting Field should be evaluated as part of the DOD Trainer Aircraft Masterplan. The Navy currently trains a limited number of Army and Air Force Special Operations units for operations aboard surface combatants. Pilots ordered to those Special Operations units would benefit from having completed UHPT with Navy, Marine Corps and Coast Guard helicopter pilots who are all trained by the Navy at NAS Whiting Field. The Army's total NTH leasing costs should be lower than now expected if fewer helicopters are needed at Fort Rucker when a limited number of prospective Army pilots are sent to NAS Whiting Field for UHPT.

DMRD No. 962 incorrectly implied that the Army is responsible for training Army, Air Force and all Allied nations' helicopter pilots. A number of foreign countries send their military flight students to the U.S. Navy's UHPT at NAS Whiting Field, Florida. Those nations specifically choose the U.S. Navy's proven undergraduate helicopter training program which produces the "unrestricted naval aviator" that each of those countries desires for their armed forces. Today Saudi Arabia, Spain, Italy, Germany and Denmark have a total of 59 students enrolled in Navy UHPT. All costs associated with training these foreign students at NAS Whiting Field are fully paid by their respective governments through cost reimbursement. Each year the Navy receives more requests from foreign governments for UHPT quotas than are available. Consolidation of DOD undergraduate helicopter training at Fort Rucker would, in most cases, result in these foreign governments sending their flight students to other countries which have a similar maritime helicopter pilot training program that provides basic fixed wing aeronautical skills to the prospective naval helicopter aviator. Those maritime nations include the United Kingdom, Australia and Canada. If consolidation of Army

and Navy UHPT would occur, there would be a loss of the income derived from the Navy's training of these foreign students.

Since the ITRO, Army and Navy all disagree with the DMRD 962 proposal to consolidate all initial entry helicopter training at Fort Rucker, plus the fact that ITRO's cost analysis differs greatly from the PA&E proposed savings shown in DMRD 962, approval of the 1990 DMRD 962 is not recommended at this time. The DOD Trainer Aircraft Masterplan should, however, be expanded to include Army and Navy helicopter training aircraft.

Comments from the Deputy Comptroller of the Department of Defense (Program/Budget)

OFFICE OF THE COMPTROLLER OF THE DEPARTMENT OF DEFENSE

WASHINGTON, DC 20301-1100

NOV 4 1991

(Program/Budget)

MEMORANDUM FOR DIRECTOR ACQUISITION MANAGEMENT DIRECTORATE, IG

SUBJECT: Audit Report on the Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (Project No. 1AS-0001)

In his decision on DMRD 962, the Deputy Secretary of Defense indicated that some of the issues in the DMRD should be explored further. The issues of eliminating fixed wing training for Navy helicopter and combining Navy and Army undergraduate helicopter training should be referred to the Secretary of the Navy for further review.

Comments on the remaining findings and recommendations contained in the subject audit report are attached. We are providing comments only on those recommendations and findings with which we disagree.

L. P. Dube
Deputy Comptroller
(Program/Budget)

COMMENTS ON FINDINGS AND RECOMMENDATIONS
ON ACQUISITION OF COMMON AIRCRAFT FOR NAVY
AND AIR FORCE UNDERGRADUATE PILOT TRAINING

Finding: The IG found that the FY 1989 Trainer Aircraft Master Plan did not support the quantity and timing of Navy and Air Force replacement trainer aircraft planned for the next 25 years. The plan does not recognize force structure reductions, increased pilot active duty obligations, and improved pilot selection procedures. In addition, the IG found that the Air Force required 161 Tanker-Transport Training System T-1A aircraft rather than the 211 included in the Trainer Aircraft Master Plan.

Comptroller Position: Partially concur. The Training Plan accurately reflected the assets necessary to support the Department's pilot training required at the time of its preparation. While the IG finding is correct that some training rate assumptions included in the Plan are no longer valid, the IG fails to note that the training plan is a guideline only. Several adjustments to planned acquisition objectives have already been made to accommodate the changing force structure, most notably the reduction in planned procurement of the Tanker-Transport Training System (T-1).

Procurement requirements for the T-1 will be continuously assessed as part of the budget review. The T-1 acquisition objective was reduced from 211 to 191 aircraft during the FY 1992/93 budget review. The IG recommendation to reduce the T-1 program by an additional 30 aircraft was not supported by training rate analysis conducted at that time; however, further declines in training rates might justify truncation of the program. Near term reductions are inadvisable because the budgeted annual T-1 procurements are required to fully support initial tanker and transport training squadrons.

Recommendation: The IG recommends that a new Department of Defense Trainer Aircraft Master Plan be prepared.

Comptroller Position: Non-Concur. The Master Plan is not a recurring requirement but is prepared periodically at the request of Congress. The plan is a guideline only. The number of aircraft to be purchased and the timing of procurements is reviewed and adjusted to reflect changing requirements during the program, budget, and acquisition reviews. A new Master Plan is not required for internal DoD use.

Recommendation: The IG recommends that the Secretary of the Air Force defer the planned procurement of the Tanker-Transport Training System if PACER CLASSIC modification funding is continued for the T-38 aircraft. In addition, the IG recommended that the DoD Comptroller withhold Tanker-Transport

Training System (T-1) program funding pending the T-38 aircraft PACER CLASSIC modification decision by the Air Force.

Comptroller Position: Partially concur. The PACER CLASSIC program referenced by the IG has been significantly reduced from a $700 million effort to one under $100 million and is now focused on cockpit avionics changes only. Therefore, the concern of the IG over possible duplicative training investments in the PACER CLASSIC modification and the T-1 has already been resolved.

It should be noted that the Air Force is pursuing the T-1 procurement to institute a two-track specialized pilot training program similar to that used by the Navy. The T-38 aircraft provides training in a small high performance fighter, and does not provide the training required for a student destined to fly larger multi-engined tanker and transport aircraft. The T-1 will allow the Air Force to tailor its pilot training to the student's needs. In addition, by mirroring Navy procedures, the Air Force will be in a better position to enter into joint procurements in the future such as the planned Joint Primary Aircraft Training System, a replacement for both the Navy's T-34C and Air Force's T-37 aircraft.

Recommendation: The IG recommends that the Navy reduce the number of T-45A aircraft to be procured from 300 to 258 based on reductions in force structure and improved pilot selection procedures.

Comptroller Position: Partially concur. While the IG is correct in its conclusion that revised training requirements will result in fewer T-45's being needed, the Navy estimates that 32 aircraft, not 42 as recommended by the IG, can be reduced from the program. Also, the Navy has recently determined that it will replace the T-2 and the TA-4 aircraft with T-45's for E-2, C-2, and Naval Flight Officer training. As a result of this new requirement, 44 additional T-45 will have to be procured. The total requirement for T-45 aircraft, as approved by the Defense Acquisition Board on June 26, 1991, is now 312 (300 less 32 plus 44). This requirement will undoubtedly change several more times over the course of the next several years, and appropriate changes will be made to the later years of the procurement program (currently scheduled to be complete in the 2001). No FY 1992-1997 savings will be realized even if the procurement requirement is again revised downward.

Comments from the Department of the Army

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS
WASHINGTON, DC 20310-0400

REPLY TO ATTENTION OF

29 OCT 1991

DAMO-TRO

MEMORANDUM THRU ~~ASSISTANT SECRETARY OF THE ARMY (MANPOWER & RESERVE AFFAIRS)~~ 8 Nov 91 ATTN.

FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE, ATTN: ACQUISITION MANAGEMENT BRANCH, 400 ARMY NAVY DRIVE, ARLINGTON, VIRGINIA 22202-2884

SUBJECT: Audit Report on the Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (Project No. 1AS-0001)

1. Reference memo, SAIG-PA, 11 Sep 91, Subject as above, with draft report (Encl 1).

2. Of the four findings presented in the subject draft report, only Finding A and Finding D merit comment. Others are Navy and Air Force specific.

3. Finding A - Department of Defense 1989 Trainer Aircraft Master Plan.

a. The above plan was focused on Navy and Air Force systems and did not include the Army. However, since completion of the report, the Army has taken initiatives to replace some of the UH-1 training helicopters at Fort Rucker with less expensive commercial aircraft, thus avoiding costs associated with the UH-1.

b. Concur with the report conclusion and recommendation for corrective action provided that progress on the current Army initiative is not impeded in any way. This is a prudent course of action as all cost-benefit analysis to economically justify the Army replacement aircraft has been completed.

4. Finding D - Relocating the Navy's Undergraduate Helicopter Pilot Training Program.

a. The response to this report remains unchanged from the Army response to DMR 962 which supports the consolidation of all helicopter pilot training at the Army Aviation Center at Fort Rucker, Alabama.

b. Concur with the report conclusion and recommendation for corrective action as long as resources are provided to the Army

DAMO-TRO
SUBJECT: Audit Report on the Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (Project No. 1AS-0001)

to train the student load and the load does not exceed the schools capacity to train.

5. HQDA, DAMO-TRO POC LTC Schettler, 44992.

Encl

Jerry N. Armstrong
Colonel, GS
Chief, Training Operations Division

CF:
DAMO-ZQ
SAIG-PA

2

Comments from the Department of the Navy

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

DEC 20 1991

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subj: DRAFT REPORT ON THE AUDIT OF ACQUISITION OF COMMON AIRCRAFT FOR NAVY AND AIR FORCE UNDERGRADUATE PILOT TRAINING (PROJECT NO. 1AS-0001)

Ref: (a) DODIG memo of 10 Sep 1991

Encl: (1) DON Response to Draft Audit Report

The Department of the Navy response to reference (a) is provided at enclosure (1).

Gerald A. Cann

Copy to:
NAVINSGEN
NAVCOMPT (NCB-53)

Department of the Navy Response

to

DODIG Draft Report of September 10, 1991

on

Acquisition of Common Aircraft for Navy and Air Force
Undergraduate Pilot Training
Project No. 1AS-0001

Finding A:

Because of significant events after publication and modifications made to existing trainer aircraft, the Masterplan did not provide sound justification supporting the quantity and timing of Navy and Air Force replacement trainer aircraft planned for the next 25 years. Continued adherence to the Masterplan will result in the procurement of 351 excess replacement aircraft costing $2.6 billion and the premature delivery of 417 replacement aircraft.

Recommendation A-1:

We recommend that the Under Secretary of Defense for Acquisition and the Secretaries of the Military Departments prepare a new Department of Defense Trainer Aircraft Masterplan that:

a. Recognizes the decreased Service annual undergraduate pilot training rates and ongoing aircraft modifications by reducing planned numbers of Tanker-Transport Training System aircraft, Joint Primary Aircraft Training System aircraft, Bomber-Fighter Training System aircraft, and T-45A aircraft, as indicated in Appendix E.

b. Examines the quality and adequacy of undergraduate pilot training, defines existing and anticipated training deficiencies, demonstrates how new replacement aircraft will enhance training effectiveness, and provides cost-benefit analyses to economically justify acquisition of replacement aircraft.

c. Addresses Army trainer aircraft replacement requirements.

DON Position:

1a. Partially concur. Department of Defense Trainer Aircraft Masterplan must be updated to include the most recent data on training requirements and production rates. Appendix E of the DODIG audit, however, does not reflect the most current information and therefore should not be used as a reference point.

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1b. Do not concur. The Trainer Masterplan serves as a planning document not a programming document. To build and maintain a document of the detail outlined in the audit would only add another layer of beauracracy to a lengthy procurement process. Maintain the Trainer Masterplan as a long range planning document with periodic updates tied to the POM process.

1c. Concur.

Recommendation 2:

We recommend that the Secretary of the Navy further reduce the T-45A requirements and make appropriate increases in the Joint Primary Aircraft Training System aircraft requirements, when changes are made to the Navy's syllabuses as the result of the Navy Primary Aircraft Training System Concept Study.

DON Position:

2. Partially concur. The Navy has reduced T-45 aircraft requirements by 32 units from the DOD Trainer Masterplan. OPNAV with NAVAIR assistance will respond to future adjustments prompted by pipeline expansion opportunities revealed by in-progress JPATS studies. However, the current T-45 aircraft procurement plan represents an accurate picture of program requirements.

Finding C

The Navy requirement that helicopter pilots receive fixed-wing training before they receive undergraduate helicopter pilot training (UHPT) is neither cost-effective nor an efficient use of training time. Fixed-wing training of undergraduate helicopter students is not cost effective because less than 2 percent of the graduates transition to fixed-wing operational aircraft. Eliminating the fixed-wing training requirement would enable the Navy to reduce UHPT costs by $300 million over the 6-year Future Years Defense Program, avoid one-time aircraft replacement costs of about $600 million, and reduce the length of the UHPT program by about 27 weeks.

Recommendation C

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to eliminate the fixed-wing training requirement for Navy and Marine Corps helicopter students.

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DON Position:

Do not concur. The U. S. Navy's UHPT training continuum is not unique. Other maritime powers like the United Kingdom, Australia and Canada have similar programs that provide basic fixed-wing aeronautical skills to a prospective helicopter aviator prior to specific helicopter flight training.

A NAVAUDSVC audit of the Navy's undergraduate flight training program (No.90-0013) to determine whether undergraduate flight training was effective in producing the quality and mix of pilots and flight officers needed to ultimately staff fleet squadrons concluded that there "were no problems with the Undergraduate Flight Training Program, which produces the quality and mix of pilots and naval flight officers needed in the fleet."

The objective of fixed-wing training in the primary stages of skill development is not to provide transition opportunity for Naval Aviators. Fixed-wing training is an integral part of the overall pilot training continuum. It's elimination would be at the expense of aviator quality and safety. Additional flight hour training in some platform would then be required to ensure training requirements and learning objectives are met. The T-34 is the least expensive training platform the Services have to offer. The T-34 provides a unique exposure to out-of-control and aerobatic flight regimes resulting in greater situational awareness, confidence and ability to recognize marginal flight situations. Fixed-wing training allows for increased personnel distribution flexibility, lower attrition, a standard for pipeline selection, sea/shore rotation opportunities and established career paths for helicopter Naval Aviators.

The Interservice Training Review Organization (ITRO) Steering Committee commissioned a study to review the potential for further interservice training of UHPT. An exhaustive curriculum comparison and cost analysis was completed by a combined task force of Army, Navy, Marine Corps and Air Force subject matter experts. The conclusion was that elimination of fixed-wing training and subsequent consolidation of UHPT is not economically feasible at this time.

Projected acquisition programs complicate the issue. Before an irreversible decision is rendered, a top down study of the Services' curricula as well as procurement effects on costs and alternatives must be completed.

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Finding D

Resources dedicated to training UHPT pilots were not being effectively used. This condition occurred because the Army and Navy were each operating a training facility. Relocating the Navy's UHPT program to the Army Aviation Center at Fort Rucker, Alabama, would relieve ground and air traffic congestion at the Naval Air Station at Whiting Field, Florida, and eliminate innefficiencies associated with maintaining separate Army and Navy UHPT facilities. Relocation of Navy UHPT would improve military and civilian flight safety and provide cost avoidance savings of as much as $79 million over the 6-year Future Years Defense Program.

Recommendation D

We recommend that the Deputy Secretary of Defense approve the Defense Management Report 962 proposal to consolidate all DoD Undergraduate Helicopter Pilot Training at the Army Aviation Center at Fort Rucker, Alabama.

DON Position:

Do not concur. The Assistant Secretary of Defense has stated, "I do not concur with consolidating DoD Undergraduate Helicopter Pilot Training." He continues in his response to the Comptroller on this issue, "At present, the Navy program is well equipped, meets Navy standards, and requires no investment. DoD UHPT is already consolidated into two programs (Army/Air Force and Navy/Marine Corps/Coast Guard) that fully meet the requirements of each of the Services."

The audit's position that relocation is warranted because of ground and air traffic congestion, flight safety and inefficiencies is incorrect. The issue of congestion and safety was substantiated from Near Mid-air Collision Reports (NMCR) and an unpublished, NATS 2020 document. The Naval Safety Center advises that reported near mid-air collisions were not an accurate indicator of flight safety as it relates to production rates because of factors like visual distance perception (poor during early training stages) influence reporting. It's important to note that T-34 and TH-57 operations at NAS Whiting Field do not share airspace. Only 58 of the 323 (18%) NMCR's over a four year period involved helicopters. This does not constitute a level of congestion that demands a total pipeline relocation. NAS Whiting Field's safety record stands on its own merit. CNATRA's UHPT cumulative accident rate from FY-78 through FY-91 is an unparalleled .47.

Training efficiencies are overstated. Currently the taxpayer pays $11,000 more for the Army to train its winged helicopter aviator than for the Navy to train its rotary qualified Naval Aviator. The Interservice Training Review Organization (ITRO) Steering Committee commissioned a study to review the potential for further interservice training of UHPT. An exhaustive

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curriculum comparison and cost analysis was completed by a combined task force of Army, Navy, Marine Corps and Air Force subject matter experts. The conclusion was that elimination of fixed-wing training and subsequent consolidation of UHPT was not economically feasible. The taxpayer will pay a one time cost of $18.7 million as well as a recurring cost of $32.9 million each year to eliminate fixed-wing training and move Navy UHPT to Fort Rucker, Alabama.

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UHPT HISTORY OF ISSUES

1. The following is a chronology of the UHPT consolidation issues:

- o 1970 Consolidation of UHPT first proposed by the House Appropriations Committee.
- o 1971 Defense staff study recommended consolidation, but only the USAF chose to have Army train its helicopter pilots.
- o May 74 GAO report recommends move toward consolidation.
- o Aug 74 ASD (M&RA) responds to GAO that consolidation will be deferred pending ITRO study.
- o Mar 75 ITRO study concluded that UHPT consolidation would be cost effective.
- o Dec 75 Program Budget Decision (PBD) 317 directs consolidation of UHPT under Army at Fort Rucker in FY-77.
- o Jun 76 HAC recommends Navy retain UHPT - overturned by floor vote.
- o Jul 76 SAC recommends Navy retain UHPT - approved by floor vote.
- o Dec 76 PBD 248 directed consolidation of UHPT at Fort Rucker (1 Oct 77) and indicated revised Army syllabus should satisfy Navy requirements. Estimated savings of $45.5M (FY-78 to 82) not tied to base closure.
- o Jan 77 DoD FY-78 budget request again supported consolidation. Navy planned to consolidate 1 Oct 77.
- o Aug 77 Congressional action again deferred UHPT consolidation in FY-78 adding, "...no realignment of advanced Navy training bases."
- o Jan 78 FY-79 budget again supported UHPT consolidation.
- o Oct 78 Congressional action deferred UHPT consolidation in FY-79.
- o Dec 78 SECNAV announced Navy would consolidate UHPT.
- o Jan 79 FY-80 budget reflects UHPT consolidation.

- o May 79 Joint Undergraduate Helicopter Pilot Training Consolidation Plan developed by Chief of Naval Air Training and Commanding General, U.S. Army Aviation Center submitted for approval. Navy UHPT students to begin training at Fort Rucker on 7 Jan 80 and Navy UHPT to terminate at NAS whiting on 30 Sep 80.
- o Sep 79 House voted 244-131 against consolidation.
- o Nov 79 Senate concurred with non-consolidation when amendment to consolidate was withdrawn for lack of support.
- o Jan 80 FY-81 budget did not propose consolidation but also did not include any request for the assets identified by SECNAV as necessary for Navy to continue helicopter pilot training.
- o Jan 81 FY-82 budget proposes consolidation.
- o 1981 Congress rejected consolidation effort and directed Navy to purchase T-34C's and TH-57's to support helo training.
- o 1983 Sen Goldwater urges SECDEF to consolidate helo training.
- o 1985 Sen Goldwater again urges SECDEF to consolidate helo training and SASC directed GAO to examine consolidation. Conclusions presented 1 Feb 85 did not support consolidation and recommended against.
- o 1988 Senate Appropriations Bill requested SECNAV to report on applicability of Army Multitrack Training System to Navy/Marine Corps UHPT.
- o Sep 90 Defense Management Report Decision No. 962 stated, "There are major opportunities for improving the way in which military training is managed." Proposed management improvement in two areas: consolidation of initial entry helicopter training and increased efficiency in management of resources used for undergraduate pilot training.
- o Nov 90 The Deputy Secretary approved the Service estimate on the DMR 962, but noted that "there are some ideas worth exploring here." He therefore requested the Service Secretaries, in conjunction with ASD(FM&P), study the possibilities and report back to him by 1 February 1991.

The following reclama is provided in response to the draft Report on the Audit of Acquisition of Common Aircraft for Navy and Air Force Undergaduate Pilot Training, Project No. 1AS-0001 prepared by the Office of the Inspector General Department of Defense:

General Comments:

Significant changes in force strengths and training infrastructure have rendered the DoD 1989 Trainer Aircraft Masterplan out of date. Additionally the Navy's draft "Naval Aviation Training Systems 2020" document is inaccurate and requires a complete update before any meaningful reference should be established. Conclusions that use these documents do not reflect present conditions or on going initiatives.

Specific Comments:

Finding A. Department of Defense 1989 Trainer Aircraft Masterplan.

The DoD 1989 Trainer Aircraft Masterplan is a guideline. It provides a broad concept of strategy for future acquisitions of training aircraft. The acquisition of training systems and platforms is defined by the establishment of requirements and a very complicated process of evaluation, study and procurement. Concur that the Masterplan is outdated and needs to be revised to reflect the current plans.

The U. S. Navy's procurement strategy is based on current requirements and planning factors and will result in a buy of 268 T-45 aircraft and 347 JPATS trainer aircraft. This represents a decrease of 32 T-45 and 3 JPATS aircraft from the DoD Masterplan.

The UNFO training program has a major revision since the publication of the DoD Masterplan. This change, coupled with projected curriculum expansion, has driven JPATS acquisition to the level of 347. The audit has overstated the excess aircraft, understated the requirements and has failed to consider curriculum and programmatic changes that took place during the timeframe of its review. The Navy is planning to its currently known requirements.

Background. The Navy has reduced its annual pilot production from 1575 to an average of 1365 students per year through 1998. This decrease resulted from actions taken to meet endstrength goals and the new force structure. Increased Aviation Active Duty Service Obligations (ADSO) and improved pilot selection procedures have minor impacts on sustained pilot training rates. These management decisions are more accurately related to endstrength and accession issues.

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Force structure reductions. Projections of the future size of carrier Naval Aviation state 11 active duty carrier airwings by FY-93 as the goal not 13 CVW's as cited in the audit.

Aviation Career Improvement Act. Current obligations for students who successfully complete Naval Aviation training tracts are eight years for the jet pipeline and seven years for all other pipelines. The impact of these recent adjustments on attrition, or more accurately retention, will not be apparent until the year 1996 for the seven year obligation and the year 2000 for the eight year obligation. This difference of four years between the two dates is a result of the initial implementation dates of the revised obligations. Overall pilot inventory growth will be realized in those two transition years. Effects upon PTR and related requirements will be considered and appropriate policy and management decisions and adjustments will be implemented. Training attrition rates should not be affected.

Pilot selection procedures. A Navy Command Project Team (CPT) was established to examine the feasibility of incorporating computer based performance tests in assessing selection potential of Naval and Marine Corps aviation candidates. The CPT met 30 Jul 91 and recommended a formal program be initiated and approved. Naval Medical Research and Development Command has prepared a letter for program costing and initiation. Implementation is expected for early CY-92.

Aircraft Requirements. Tab A outlines the reduction in planned T-45 aircraft acquisition as a result of force drawdowns and site selection decisions. In summary, the Navy has already reduced T45 requirements by 32 aircraft and JPATS requirements by 3 aircraft from Masterplan estimates. Additionally, the audit's revised requirements for aircraft do not include those requirements for NFO training or recent curriculum changes. Navy projected training production capability (which accounts for a surge of 10 per cent) is based on a 1450 primary student pilot capacity and a 550 basic NFO capacity. T-45 training production capability is based on a 450 advanced jet student pilot capacity. Aircraft requirements are calculated on an established procurement methodology and are continually adjusted for changes in planning factors. No further reductions in these programs can be realized without resultant shortfalls in meeting future training requirements.

Quality and adequacy of training. A primary objective of the DoD 1989 Trainer Aircraft Masterplan was to outline a joint strategy for possible future joint acquisitions. It was not directed or intended to be a detailed blueprint for the services' training program policies. By its own account, the DoD Masterplan was "structured to provide the basis for long range planning. It is not intended to be a programming document." It represents a snapshot in time referring to the then current programs that were designed to ensure quality and adequacy of pilots, overcome

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existing and anticipated training deficiencies, improve training effectiveness, modernize the aging trainer aircraft fleets and minimize acquisition and operation costs. The Navy has built on this plan by adjusting planned procurements dependent upon force reductions and curriculum revisions. The alternatives and decisions referred to by the auditors are already the subjects of intensive and thorough studies that are systemic to the acquisition process.

Army trainer aircraft requirements. The Army plans to acquire the New Training Helicopter (NTH) in the next two or three years. The NTH is less expensive to operate than the UH-1 and will generate overall savings for the Army. The Navy, with a Service Life Assessment Program (SLAP), Service Life Extension Program (SLEP) and modification of its TH-57 costing $13.9M as outlined in NAVAIR's 2015 study, plans to use the TH-57 helicopter until the year 2005. There would be a cost avoidance gained by maintaining the current programs. The expense of acquiring an additional 100 NTH aircraft earmarked for Navy training would be saved. This cost avoidance could amount to anywhere from $30 million to more than $100 million.

T-45 training requirements. The Navy recognizes the value in shifting training from advanced, more costly platforms, to lower performance, less costly ones, provided training requirements can be met. It is now, and always has been one of the basis of need for Navy JPATS (NPATS)...to acquire a training system more capable than the T-34C system that will allow an economic tradeoff between the NPATS and the T-45TS.

In order to determine the magnitude of tradeoff, the Navy is conducting an Instructional Systems Development (ISD) study of the pilot and NFO training continuums. This study (not a concept study as the audit claims) is being overseen by the Naval Training Systems Center under the cognizance of the Naval Air Systems Command and in accordance with MILSTD 1379 series. The results are expected in August 92.

Once the study results are promulgated and analyzed, the Navy will determine the degree of training to be offset and make adjustments to training requirements as necessary.

Conclusion.

The Masterplan needs a major revision to reflect the changes in the programs, plans and policies of the involved services. However, the Masterplan should not be so detailed that it restricts the processes already established to compute aircraft requirements, to establish training objectives, to project operational requirements, and to study alternatives to current inventory strategies. Established agencies and policies have already responded to each of the audit's concerns despite the Masterplan's antiquity. The Navy has already reduced the T-45TS aircraft acquisition to 268 units. Using this new baseline requirement, the audit's $630M estimate of savings for the FYDP, then, is reduced by $480 million. Since the

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current baseline target, 268 T-45's, represents the accurately computed requirement not a simple ratio, the real savings is zero.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. Partially concur. Individual programs have already accounted for the reduction of forces in calculating their requirements. In order to have a document that reflects real time planning factors, a mechanism for continual updating would have to be promulgated. Quality control and program analysis are complex functions. They are continuously examined by many organizations and individuals. An undertaking to build a document that assesses the entire training continuum, its requirements, its quality, its adequacy, its deficiencies, its cost breakdown and its effectiveness would provide diminishing returns because of instant depreciation of the subject matter without constant revision.

2. Partially concur. The Navy has already reduced T-45 aircraft acquisitions by 32 platforms. OPNAV will respond to future adjustments resulting from JPATS studies in progress. However, the current T-45 aircraft procurement plan is an accurate representation of program requirements. It should not be further decremented by the audit's simplistic ratio analysis which ignores programmatic changes in curricula and pipelines.

3. N/A

4. N/A

5. N/A

Finding B. This is an Air Force issue.

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Finding C. Fixed-Wing Training of Navy and Marine Corps Helicopter Pilots.

The U. S. Navy's UHPT training continuum is not unique. Other maritime powers like the United Kingdom, Australia and Canada have similar programs that provide basic fixed wing aeronautical skills to a prospective helicopter aviator prior to specific helicopter flight training.

Contrary to the finding of the audit, Navy undergraduate pilot training is cost effective and it represents an efficient use of training time to produce a quality pilot to meet Fleet requirements. Fixed wing training in the T-34 is the most economical training platform in any service. It provides a highly desireable trainer for the development of required basic and instrument flight skills. Elimination of fixed wing training in UHPT requires commensurate hours in another platform to provide compensation for the loss of T-34 flight hours. A total of 25.8 hours are saved because familiarization is required in only one platform vice two. Because of the higher operational costs of the Th-57, only $908 dollars are saved per student. However, the $5,544 fixed cost portion of the T-34 maintenance contract must be absorbed by other pipelines raising net costs in the short term to $4,636 per student. This analogy is priced in current year dollars. The overall effect is a more expensive undergraduate training operation. Even if this option were less expensive, there are not enough additional TH-57 airframes to accommodate the additional flight hour requirements. The use of the UH-1 for this additional training would cost two to three times as much as the TH-57 because of higher operating and contract expenses.

The objective of fixed wing training in the primary stages of pilot skills development is not to provide transition opportunity for aviators. Primary flight training is designed to provide Navy, USMC, USCG, and designated foreign national pilot candidates the skills and knowledge required to perform basic flight maneuvers and to control a single engine aircraft in contact or instrument conditions. These fixed wing fundamentals also form the basis of selection for all Navy training pipelines. The two percent of graduates who eventually transition to fixed-wing operational aircraft represents only a portion of the personnel distribution flexibility which results from helicopter pilots having undergraduate fixed-wing training. While rotary PTR accounts for 42 per cent of the total primary flight instructor requirements, over 50 per cent of primary flight instructor billets are filled by helicopter pilots. Helicopter pilots are used as fixed wing instructors...in larger quantities than are justified by the rotary PTR requirements. Additionally out of 220 fixed wing shore billets for second tour aviators, 151 are filled by helicopter pilots. In the event fixed wing training for helicopter pilots is eliminated, there would be a shortfall of fixed wing aviators to meet NAS, NRC and instructor pilot requirements. Therefore fixed wing training, at an additional cost of $4.5 million a year, would be necessary to meet these shortfalls.

Elimination of fixed wing training has an inherent unquantifiable quality loss of training and an attendant philosophy change for Naval Aviation policy:

-loss of fixed wing training will severely limit the helicopter pilot's exposure to out-of-control and aerobatic flight resulting in some loss of ability to recognize marginal flight situations/loss of situational awareness.

-the standard for pipeline selection is fixed wing training. Helicopter pilot requirements are filled by this system of selection. Direct accession from college ranks to helicopter training will impact NRC's ability to meet fleet requirements.

-since those students who do not meet fixed wing/jet limits and quotas for selection will not have a helicopter option, attrition will rise in primary training at a cost.

-helicopter pilots' career paths will be significantly altered.

-Sea/Shore rotation patterns will require significant adjustment to provide relief from constant sea duty and to provide career opportunity.

DISCUSSION OF DETAILS

Background.

The audit assumes that training received in the T-34 is non-essential and would not be integral to a strictly rotary curriculum. This is a false assumption. Basic skills and instrument training would be included in a revised training tract to meet the stated requirements of the current syllabus. Tab B illustrates the costs of a TH-57 pipeline versus the current T-34/TH-57 pipeline. The net additional cost per student would be $4,636. However, there are not enough TH-57 aircraft to provide for the additional airframe requirements.

The audit has inaccurately and inadequately compared the curricula of the two services. This audit has taken a segment of the Army's curriculum and compared it to a much larger segment of the Navy's curriculum. When consolidating two portions of dissimilar training tracks, it is essential to look at the terminal objectives of the reduced training track to see what must be added to it to meet the mission requirements of the final product. It then becomes apparent that a comparison of the total syllabi objectives leading to a designated aviator is critical. Failure to meet syllabus objectives means training requirements must become a part of the higher cost Fleet Readiness Squadron's training responsibility. Studies indicate an additional 37 flight hours must be added to the Army IERW and OH-58 tracks to meet OPNAV instrument and training requirements for designation as a Naval Aviator. Tab C and D refer.

Navy's Response to the DMR 962 Proposal. The Navy's response to DMR 962 remains a valid reclama.

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Instrument training. There are abundant OPNAV and CNATRA publications and instructions that define the instrument and flight skills necessary for Navy instrument qualification and Naval Aviator designation. The audit does not adequately define the additional flight hour requirements necessary to meet Navy standards. Actually, it does not acknowledge any specified increase of hours at all, only that it felt the Navy's estimate was overstated. Navy training philosophy is a building block approach. Repetitive events are essential to reinforce learning and are inherent parts of any training process. They are especially critical at early stages of training where skill atrophy is so apparent if events are not constantly practiced.

Instructor pilots. Instructor pilot requirement is a direct function of pilot training rates. The Aviation Career Improvement Act (ACIA) and force reductions mainly effect the strike pilot pipeline and only aggravate the instructor manning issue. The shortfall of fixed wing pilots to cover the instructor and shore requirements is being met by rotary pilots.

Marine Corps pilots. The Marine Corps Transition/Conversion Program continues to be extremely cost effective and provides a means of balancing shortages in different aircraft communities. In FY-92, the Marine Corps will be transitioning 18 rotary wing pilots to strike communities. These are second tour aviators who will be able to fill specific commissioned year group deficiencies in fixed wing communities. No other program could provide this type of flexibility and cost effectiveness.

V-22 "Osprey" training. The Marine Corps remains hopeful that the V-22 program will receive production and deployment from the Secretary of Defense. Future Osprey pilots will primarily be helicopter pilots who will require fixed wing training. Marine Corps VSTOL requirements will constitute about one half of the future rotary wing/VSTOL PTR requirement.

Increased helicopter training flight hours. There is a fallacy in comparing Army core training to overall Navy undergraduate helicopter training. Much of the training conducted in Navy advanced helo training is comparable to the Army's multitrack, professional development pipelines. The DMRD report no. 962 acknowledges that the entire Army IERW program includes the multi-track training programs.

A thorough comparison of both services' syllabus requirements was conducted by an ITRO study group. A separate detailed cost analysis accompanies this comparison. In order to meet Navy terminal learning objectives, training requirements and instrument standards, 37 hours would need to be added to the Army's core and OH-58 track. This would ensure no quality degradation of the current Naval Aviator; however, it would be a more expensive training pipeline than the present Navy production pipeline.

Air Force undergraduate helicopter pilot training program. Because of excesses in pilot inventories, the Air Force recently has stated intentions to suspend its Army quotas in favor of using these excess fixed wing aviators to meet helicopter pilot requirements. When inventories warrant the Air Force plans to return to its current UHPT program.

In a Memorandum for the Department of Defense Comptroller from the Secretary of the Air Force dated 7 October 1990, it was stated that "Army assets have not always been sufficient to meet our programmed needs. The addition of Navy training at Fort Rucker would only place additional demands on Army assets and could degrade AF training."

Potential Benefits of eliminating the Navy Fixed-Wing Training Requirement for Helicopter Pilot. The audit compares apples and oranges without redressing requisite compensation. It has summarily reduced the Navy's helicopter pilot training syllabus without regard to requirements or terminal objectives, thereby eliminating 47 hours of valuable instrument time and 20 hours of flight time that builds basic skills, aeronautical aptitude and situational awareness.

The audit recognizes neither the importance of the skills attained in fixed-wing training in the Navy pipeline nor the differences in the training tasks and the terminal objectives of the services' missions. It has already been stated that elimination of the T-34 training with the commensurate increase in rotary hours cannot be supported by the TH-57 aircraft inventory. Therefore, any speculated cost savings would be hypothetical.

The JPATS aircraft cost is overstated. The Navy's TOR places a ceiling price of $2.97 (FY-89 dollars) million per aircraft on the JPATS procurement. Assuming fixed wing training is eliminated, the cost avoidance is still overstated by $243.6 million.

CONCLUSION AND RECOMMENDATION FOR CORRECTIVE ACTION.

Do Not Concur.

The Interservice Training Review Organization (ITRO) Steering Committee commissioned a study to review the potential for interservice training of UHPT. An exhaustive curriculum comparison and cost analysis was completed by a combined task force of Army, Navy and Marine Corps subject matter experts. A line by line task analysis was conducted to identify those terminal objectives that would be eliminated if fixed wing training for UHPT was cancelled. Without compromising the quality of the graduate, a syllabus was developed that was solely comprised of helicopter training aircraft. Tab D refers.

The DoD IG audit has barely scratched the surface of the issue of eliminating fixed wing training from the undergraduate helicopter pilot training curriculum. The primary objective of fixed-wing training is to develop basic flight skills and qualifications leading ultimately to designation as a maritime Naval Aviator. Any conclusion that existing curriculum (which a recent NAVAUDSVC audit has validated as meeting requirements) can be

eliminated should include impact statements or alternate means of attaining the established requirements.

The additional benefit of using helicopter pilots in fixed wing billets results in a cost effective manpower distribution flexibility.

The audit failed to consider the following as well:

- current Navy helicopter inventory will not support additional hours required with loss of T-34 training.
- decreased product value resulting from elimination of fixed-wing training without added helicopter hours to meet requirements.
- accession problems in meeting numbers of qualified applicants volunteering for Navy program.
- Navy philosophy of requirements for a strong instrument oriented, independent thinking, Maritime Aviator versus Army philosophy of a strong visual oriented, battlefield structured Army Aviator.
- additional fixed-wing PTR to compensate for shortfall created by helicopter pilots not possessing a fixed-wing qualification or the additional expense to go back and qualify nearly 60 helicopter pilots per year in fixed-wing aircraft.
- retention and attrition affects.
- career patterns for Navy helicopter pilots.

Finding D. Relocating the Navy's Undergraduate Helicopter Pilot Training Program.

An exhaustive ITRO cost analysis study concluded that moving the Navy's UHPT program to Fort Rucker is not economically feasible. For an option that includes Finding C and Finding D of the DoD IG audit, the taxpayer will pay a one time cost of $18.7 million as well as a recurring cost of $32.9 million each year to eliminate fixed wing training and move the Navy's helicopter training operations to Fort Rucker, Alabama.

A 1985 GAO audit reported that, "A consolidated UHPT program would require over 150 percent of Fort Rucker's UHPT capacity during the fiscal years 1985-1990." A comprehensive study of the production capacities and air spaces of Whiting Field and Fort Rucker Air Field must be conducted. AICUZ and EI statements should be included.

The training capacity of Fort Rucker is stated to be 2400 students. This is twice the size of the Army's projected training rate of 1200 for FY-94. A cost savings would be realized if the Army's training infrastructure at Fort Rucker was downsized to accommodate current production. Consolidation would result in significant increases in ground and air traffic congestion at Fort Rucker. Relocation of Navy UHPT to the Army Aviation Center at Fort Rucker, Alabama would reduce moderate airspace loading at the Whiting facility at the expense of increased congestion at Fort Rucker.

The audit's position regarding Whiting Field's safety status was overstated and contained references to an unpublished "Naval Aviation Training Systems 2020" document. This training appraisal publication was not formalized because of the errors and inaccuracies in its text. A more accurate account of training capacity was detailed by a Naval Facilities Engineering Command study conducted at NAS Whiting Field during FY-87 when training rates were 15 percent higher than FY-91 rates.

Cost analysis of the current services' training tracks clearly justifies maintaining the status quo. Even with a greater time-to-train and more flight hours, the Navy's undergraduate helicopter training program costs $11,000 per graduate less than the Army's. This translates to a cost savings of $6.38M per year and is testimony to the Navy's effective, cost efficient training program.

DISCUSSION OF DETAILS

Background

Previous reviews. References to previous reviews are not helpful in evaluating the effectiveness of the current consolidation issue. Training goals and requirements as well as aircraft procurements (present and planned) have significantly changed the infrastructure and curricula which support the services' training programs. Current proposals must be evaluated on today's programs and tomorrow's plans, not yesterday's plans.

DMR 962. The Assistant Secretary of Defense (FM&P) in a Memorandum for Comptroller dated 4 October 1990 stated that "At present, the Navy program is well equipped, meets Navy standards and requires no investment. DoD UHPT is already consolidated into two programs...that fully meet the requirements of each of the services. The savings estimated in this DMRD alternative are not large enough...to warrant resurfacing this issue." The Under Secretary of the Navy provided pertinent comments in his Memorandum for the Comptroller, Department of Defense of 5 October 1990. He said, "Contrary to the proposal on helicopter training consolidation, the Navy's requirement for all pilots to receive fixed wing training is both essential and cost effective." The Department of the Navy in its reclama to PBD 962 provided conclusive evidence that this Defense Management Review contained only a superficial argument for consolidation and neglected major impacts and considerations. In fact, a recent independent ITRO cost analysis study revealed that "it is not economically feasible to consolidate the Navy and the Army UHPT programs...".

Air Safety Concerns. To suggest that the number of near midair collision reports has a direct correlation to safety mishaps or safety restrictions is presumptuous. More correctly these reports indicate the safety awareness instilled in promising young aviators by emphasizing the early formulation of an attentive, active lookout doctrine. Naval Safety Center personnel advised that reported near mid-air collisions were not an accurate indicator of flight safety when related to pilot training rates because many factors, such as an individual's visual perception of distance, influence pilots filing reports of near mid-air collisions. The data indicates that during periods of declining training rates, reporting increased. Also, during a period when training decreased by five percent, the reported near mid-air collisions decreased by 39 percent. This suggests that there is not a correlation between NMCR and training rates and that maybe another force besides congestion may be affecting mid-air collision reporting...like awareness or command emphasis on safety issues and reporting.

It's important to note that the T-34's and TH-57's at Whiting Field do not share airspace. Consequently, an evaluation of purely TH-57 related NMCR's is a valuable indicator of the true congestion of helicopter operating environment at NAS Whiting. Of the 323 reports citing near misses, 58 (18 percent) involve TH-57's. Although indicative of a situation that warrants continued attention, this hardly constitutes a level of congestion that demands a total pipeline relocation.

The Naval Facilities Engineering Command conducted a study of training capacity at NAS Whiting Field during FY-87 when training rates where 15 percent greater that FY-92. It indicates that the fixed wing training capacity of NAS Whiting Field is underutilized. Therefore relocation for reasons of congestion is not valid. In reality this proposal will take two programs executing at safe operating levels (Navy at anywhere from 33 percent of optimum capacity for acrobatic airspace to 70 per cent for optimum capacity for recoveries and the Army at approx 50 per cent of training capacity) and produce an infrastructure operating at greater than 80 percent of training capacities.

The draft copy of the "Naval Aviation Training System 2020" was not published because it was out-of-date and contained inaccurate data and erroneous information. It was prepared in 1989 and does not represent the Navy's current operation nor its future plans.

Physical Plant at Fort Rucker. Fort Rucker has excess training capacity in airspace, academic facilities, base fields and stage fields. There remains some questions as to the maintenance facilities, airspace capacity, instrument training facilities, flight briefing spaces, personal vehicle parking availability, TH-57 simulator/CPT space UOPH/UEPH occupancy levels, and Navy unique support such as Personnel Support Activity, medical flight surgeons, fair share ATC, firefighting and FAA liaison. Quality of life is a sensitive and hard to quantify issue, yet it is obvious that the Navy would be asked to give up favorable quality

12

of life points to accommodate this consolidation. Additionally the Secretary of the Air Force in their response to the DMRD 962 expressed concern that "Army assets have not always been sufficient to meet our programmed needs. The addition of Navy training at Fort Rucker would only place additional demands on Army assets and could degrade Air Force training".

Navy's Response to DMR 962. The Navy's reclama to DMR 962 is a factual, consistent representation of the issue. It has a similar conclusion to the latest GAO study in 1985 and was substantiated by a recent in-depth cost analysis study conducted by an ITRO subcommittee.

TH-57 trainer helicopter. The Army OH-58 helicopter is not a companion aircraft to the Navy's TH-57C helicopter. Fort Rucker must expand current maintenance contracts to handle any proposed curriculum involving UH-1 and TH-57 aircraft; however, it would be at an increased cost from the current Navy contract. The audit's approach focused on feasibility and failed to cover the full scope of costs of a consolidation. It neglected to cover administrative costs, simulator requirements, curriculum adjustments, and most importantly maintaining the current quality of the end product, the winged aviator.

Helicopter Landing Trainer Barge. Concur. However, HLT events conducted in Pensacola operations area would add unnecessary transit hours for the student and instructor, as well as TAD funding for the LSE's and HCO's.

Safety concerns. Mid-air collision reporting is the result of implementing safe operating practices and do not represent unsafe conditions. It is incorrect to assume that numbers of reports automatically reflect an unsafe situation.

Congressional action. Because consolidation will not be cost effective, it is hoped Congress will continue to view this issue unfavorably.

Cost Avoidance Savings. The audit is incorrect in assuming that consolidation will realize cost avoidance from economies of scale. Without base closure or facilities shutting down, shifting training sites and assets results in additional costs and inefficiencies. The cited method of contract instruction does not consider the resulting quality of the graduate nor the loss in "fleet ready room experience" gained from association with professional military instructors. Attrition for UHPT was overstated by six percent. The majority of the Navy's attrition takes place in the fixed wing T-34, a more cost effective platform than any of the Army helicopters. A true comparison of the training and terminal learning objectives, reveals that the Army's cost to the taxpayer per winged helicopter pilot is $11,000 more than the Navy's cost for its winged Naval Aviator, in spite of 16 weeks less

time-to-train and 33 hours less flight time in the syllabus. This translates to a cost of $36,300,000 rather than a cost savings. Additional expense will be incurred if training must be transferred to the more costly FRS syllabus because training objectives were not met in the current Army platform and curricula.

Consolidation of Navigator Training Within DoD. Concur. It must be noted that this consolidation involved small student numbers and did not involve aircraft maintenance contracts, aircraft movement or major training philosophy decisions. Further, shortfalls, if any, in the consolidated Nav training can be made up at no cost in the VP FRS. Supplemental NFO training can occur while pilot training is being conducted.

Conclusion.
Do not concur.
Whiting Field's safety record stands on its own merit. CNATRA's .47 accident rate in helicopter training from FY-78 to FY-91 is enviable. The Navy/Marine Corps rate for the same time period is 4.09 and the Army's TRADOC rate is .74. This low record for the Navy's training is indicative of a strong commitment to safety as evidenced by an involved, active program in reporting near mid-airs. If anything, relocation will produce a congested, high density training environment at Fort Rucker with a definite concern for safety. Due to lower costs of maintenance contracts and operating expenses of the T-34 and the TH-57, there are no cost efficiencies associated with a simple relocation of training to Fort Rucker. However, there is a real cost increase to relocate.

RECOMMENDATION FOR CORRECTIVE ACTION.
Do not concur.
This proposal to consolidate all DoD UHPT at Fort Rucker, Alabama is not economically feasible and would result in an irreversible quality and surge capacity decrement.

Comments from the Department of the Air Force

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

05 DEC 1991

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING
OFFICE OF THE INSPECTOR GENERAL
DEPARTMENT OF DEFENSE

SUBJECT: DoD (IG) Report on the Audit of Acquisition of Common Aircraft for Navy and Air Force Undergraduate Pilot Training (UPT), Project No. 1AS-0001 -- DRAFT REPORT -- INFORMATION MEMORANDUM

This is in reply to your memorandum requesting comments on the findings and recommendations made in the subject report.

Attached is an Executive Summary as well as a detailed, paragraph by paragraph analysis of the draft audit. We stand ready to answer any questions which may be raised by our reply. The AF point of contact is HQ USAF/XOOTW, Lt Col Crowe, (703) 697-1810.

MICHAEL A. NELSON, Lt Gen, USAF
Deputy Chief of Staff
Plans and Operations

2 Attachments
1. Audit Response - Exec Summary
2. Audit Response - Expanded w/4 Atch

cc: ATC/CC

Department of the Air Force

PROJECT NO. 1AS-0001

AIR FORCE REPLY TO
DRAFT AUDIT REPORT ON
THE ACQUISITION OF COMMON AIRCRAFT
FOR NAVY AND AIR FORCE UNDERGRADUATE PILOT TRAINING

EXECUTIVE SUMMARY

Introduction. The Department of Defense's 1989 Trainer Aircraft Masterplan is a guideline. As a planning document, it provides a broad concept of strategy for future acquisitions. Although world and national events have rendered some aspects of the Masterplan outdated, the basic precepts remain sound The Air Force is taking aggressive actions to translate new force structure requirements into a stable training environment which will allow an accurate, up-to-date, and well staffed Masterplan to be published in 1992.

Objective.

- Reiterate the Masterplan is a planning document, not a programming document
- Demonstrate the trainer fleet size is determined by the Air Training Command utilization-rate programmatics being applied to Air Force Chief of Staff-directed pilot production numbers
  -- The AF will buy aircraft which reflect its current and future needs
- Illustrate the fact that the Air Force internal controls using the Trainer Summit Process, the Joint Requirements Oversight Council, Statements of Operational Need, Mission Need Statements, System Operational Requirement Documents, and Operational Requirement Documents present a more accurate, real-time statement of deficiencies and requirements than the Masterplan
  -- This process was exercised for the Tanker-Transport Training System, Joint Primary Aircraft Training System, and the Enhanced Flight Screener Force
- Explain the correlation between the PACER CLASSIC modification and the number of Tanker-Transport Training System aircraft to be purchased is not direct
- Prove the validity of the Enhanced Flight Screener procurement by submitting a certified Economic Analysis

Audit Results. The Air Force answered the two applicable findings.

- **FINDING:** The Navy and the Air Force overstated the number of replacement aircraft required and accelerated timing as to when the aircraft are needed. As a result, the Navy and Air Force will unnecessarily procure 351 trainer aircraft costing about $ 2.6 billion and prematurely replace as many as 417 aircraft.

- **REPLY:** The Air Force made multiple rated management decisions which affected both current and future trainer fleet sizes. ATC implemented a programmatic approach to determining aircraft numbers when given the required pilot production numbers. As a result, the Air

Force reduced T-37s from 640 to 570 in FY 92; T-38s from 688 to 419 by FY 93; reduced the Joint Primary Aircraft Trainer buy from a baseline of 538 to approximately 420; reduced the Tanker-Transport Trainer System buy from 211 to less than 180; and reduced the Enhanced Flight Screener buy from 125 to 115. They also dedicated money for an engineering analysis and study for further T-38 modifications as an alternative to developing a Bomber-Fighter Training System. This modification would be needed on approximately 375 aircraft to sustain projected training requirements.

Savings quoted by the draft audit are not accurate. The oversight and internal controls which the Air Force already has in place will ensure the proper number of trainer aircraft are procured/maintained regardless of input from outside the Air Force.

- **FINDING:** The Air Force did not adequately justify replacement of its T-41 trainer aircraft with a new Enhanced Flight Screener aircraft. As a result, the Air Force can avoid an expenditure of $ 28 million for 125 EFS aircraft.

- **REPLY:** The Air Force accomplished a comprehensive Economic Analysis which justifies the purchase of 115 aircraft using the most current pilot production numbers. The Enhanced Flight Screener trial program conducted in the summer of 1990 screened 57 student pilot candidates. Ten were eliminated for a variety of causes. None of the candidates entering Undergraduate Pilot Training have been eliminated thus far, including 21 who have completed the primary phase and five who have earned their aeronautical rating.This is in stark contrast to the historical UPT attrition rate of 20-30 percent. The Enhanced Flight Screener will lower attrition in UPT from the programmed 20 percent to 15 percent and realize an annual Operations and Support savings of $2 million and Joint Primary Aircraft Training System/ Tanker-Transport Training System acquisition savings of approximately $60 million (FY 93 dollars). The Enhanced Flight Screener fleet will pay for itself in approximately 9 years with the pilot production requirements projected over the Future Years Defense Plan.

Summary of Recommendations. The Air Force will update the Masterplan in 1992 but continue to use an established system of internal controls and oversight to match requirements to fleet size and optimize the available resources. Program funds should not be withheld from the Tanker-Transport Trainer System because the PACER CLASSIC modification is essential to keep the fleet safely flying today as well as extend the service life for the future. ATC will continue to examine further T-38 modifications as an alternative to the Bomber-Fighter Training System. The Enhanced Flight Screener is an essential and cost effective component of the Air Force pilot training and rated management system.

The following reclama is provided in response to the draft Report on the Audit of Acquisition of Common Aircraft for Navy and Air Force (AF) Undergraduate Pilot Training (UPT), Project No. 1AS-0001 prepared by the Office of the Inspector General (IG), Department of Defense (DoD):

GENERAL COMMENTS:

Significant changes in world events are driving resultant changes in force structure, training requirements, and training infrastructure. These changes are both dynamic and systemic in their implementation and effects. As a result, procedures were put in place within Air Training Command (ATC) and on the Air Staff to accommodate the evolving AF flying training requirements and resource allocation process from time of acquisition to placement in the Aerospace Maintenance and Regeneration Center (AMARC). Although world / national events rendered some aspects of the DoD 1989 Trainer Aircraft Masterplan (the Masterplan) outdated, the basic precepts outlined in the document remain valid. Based on these changes, the AF is taking aggressive actions to achieve a stable training environment which will allow an accurate, up-to-date, and well staffed Masterplan revision in 1992. DoD IG conclusions which were derived using the outdated portion of this document are inherently flawed. A true evaluation or comparison would be valid only if the most current data and information were presented. The DoD IG team drafted their report prior to ATC applying programmatic fleet reductions to the two most recent rated management decisions to lower UPT production.

SPECIFIC COMMENTS:

Finding A. Department of Defense 1989 Trainer Aircraft Masterplan

The draft audit report indicates a fundamental misunderstanding of the charter of the Masterplan. The National Defense Authorization Act for Fiscal Year 1989 directed DoD to "outline a plan" for joint procurement of trainer aircraft. To this end, the Masterplan was developed and submitted to Congress on February 1989. The Masterplan is, by design, a guideline. It provides a broad concept of strategy for future acquisitions of trainer aircraft. To quote from the Masterplan Purpose (page 1-1, listed at Atch 1): "... This DoD Trainer Aircraft Masterplan consolidates the issues, concepts, and requirements of USN and USAF UPT into a single reference and planning document. This masterplan is structured to provide a basis for long-range planning. It is not intended to be a programming document." The actual acquisition of training systems and platforms is defined by the systemic establishment of requirements and a very complicated process of evaluation, study, and procurement (See Quality and Adequacy of Training for discussion of this process). In addition, the programming and budgeting for acquisitions involves an iterative process, between the MAJCOM and Air Staff, which cannot be encumbered by reliance on a general planning document such as the Masterplan. To review the Masterplan in isolation from other procedures and documents is truly misleading.

The AF's most recently staffed procurement posture was based on a 1350 total UPT production (1040 active duty AF), which resulted in a planned buy of 465 Joint Primary Aircraft Training Systems (JPATS), 180 Tanker, Transport, Trainer Aircraft (T-1s), and 125 Enhanced Flight Screener aircraft (EFS). This buy is 73 JPATS and 31 T-1s less than what was planned in

the Masterplan. Current force projections and rated management decisions lead to a total UPT production of approximately 1200 pilots (900 active duty AF). This will likely result in further reductions in training aircraft as outlined in Attachment 2. The exact number of aircraft required will be determined by programmatic calculations involving the program flying training hours required and the utilization rate (UTE) capabilities of the aircraft involved (see Attachment 3). Decreased UPT production rates, force structure changes, and developments in the US Navy's acquisition of the T-45, combined with the success of the T-38 Pacer Classic modification program, afford impetus to examine further T-38 modifications, possibly deferring the need for a Bomber Fighter Training System (BFTS). If the Masterplan was executed, at the earliest replacement opportunity (2007) the T-38 would have been in service 47 years. The PACER CLASSIC modifications, barring unforeseen circumstances, should ensure a safe training platform until at least this time frame.

The audit overstated the excess aircraft and failed to allow for the programmatic reductions from the Feb and Sep 91 rated management decisions. The AF is buying to its requirements as they evolve. It is using the general guidance provided by the 1989 Masterplan but not its aircraft numbers which are clearly outdated.

Background: The AF reduced its annual production from approximately 1560 (FY 92 Presidential Budget) to less than 1350 (CORONA, Feb 91) and expects another drop to 1200 (out year production, CSAF rated management brief, 26 Sep 91). Again, the AF will make real-time procurement decisions based on the programmatics necessary to produce pilots in the out years and absorb them into follow-on training.

Force Structure Reductions: Force structure is being reduced but where it will stabilize is uncertain. The AF is addressing this at the highest levels. Programmatic changes will adjust aircraft fleet sizes as the numbers are stabilized.

Aviation Career Improvement Act: N/A for the AF

Pilot Selection Procedures: The Air Force still plans to implement a Pilot Candidate Selection Method (PCSM). The PCSM process involves using candidates' performance on a desk-top cognitive, psycho-motor tester (Basic Attribute Tester or BAT), coupled with their Air Force Officer Qualifying Test (AFOQT) to predict their chances of success in UPT. This process, when combined with the new dual-track specialized undergraduate pilot training, will reduce attrition in UPT from the recent average of 23 % to the programmed rate of 20%. EFS will further lower programmed attrition to 15%. This programmed change in attrition provides the basis for long-term savings from two main sources: 1) a reduction in the SUPT flying hour program normally required to attrit students at the higher rate and 2) a reduction in aircraft (12 fewer JPATS and 1 fewer T-1) and training devices purchased due to the reduced flying hour program and student load. The AF is dedicated to entering candidates into UPT, who are the best qualified and have the greatest chance of succeeding. The most cost effective and resource-sensitive way of accomplishing that objective is through the PCSM/EFS route.

Aircraft Requirements: Reductions in T-37, T-38, JPATS, EFS, T-1, and BFTS aircraft are outlined at Attachment 2. The AF has dedicated monies in FY 92 and 93 to study a T-38 modification as an alternative to the BFTS. Aircraft requirements are calculated on an established methodology and are continually adjusted for changes in planning factors.

The AF and USN completed a Trainer Summit on 18 Oct 91. Although required by law 180 days prior to the Defense Acquisition Board (DAB) for JPATS, the AF expanded the process to include a review of the T-1 and EFS. The overall purpose of the Summit process and the Joint Requirements Oversight Council (JROC) is to review "USAF/USN primary flight training

needs and approve joint requirements." This process included:

ACTION OFFICER REVIEW	22 MAY 91
O-6 REVIEW	11 JUN91
0-6 REVIEW	25 JUN 91
2-STAR PRELIMINARY REVIEW	18 JUL 91
2-STAR REVIEW	5 AUG 91
3-STAR REVIEW	20 AUG 91
EXEC LEVEL 2-STAR REVIEW	2 OCT 91
EXEC LEVEL 3-STAR REVIEW	4 OCT 91
4-STAR SUMMIT	18 OCT 91

This process, not the Masterplan, is the primary method of ensuring the services buy aircraft which meet requirements driven by operational factors and in sufficient quantities to meet projections in force structure.

Quality and Adequacy of Training: A primary objective of the Masterplan was to outline a joint strategy for possible future joint acquisitions. It was not directed or intended to be a detailed blueprint for the services' training program policies. By its own account, the Masterplan was "structured to provide the basis for long range planning. It is not intended to be a programming document." It represents a snapshot in time referring to the then current programs which were designed to ensure quality and adequacy of pilots, overcome existing and anticipated training deficiencies, improve training effectiveness, minimize acquisition and operation costs, and modernize the aging trainer aircraft fleets (The T-37 has been in service for 33 years and the T-38 for 30). The AF continues to build on this plan by adjusting planned procurements dependent upon force changes. The JROC/Summit process sharpened the focus on the relationship of aircraft requirements to quality of training. Documents such as Statements of Operational Need (SONs), Mission Need Statements (MNSs), System Operational Requirements Documents (SORDs), and Operational Requirement Documents (ORDs) present a more accurate, real-time statement of deficiencies and requirements. These are a few examples of the oversight process and indicate comprehensive internal controls of aircraft acquisition.

Army Trainer Aircraft Requirements: N/A for the AF

T-45 Training Requirements: N/A for the AF

Service Life of T-38 Advanced Trainer: The AF concurs in part with the DoD Audit. The following changes occurred since the Masterplan was published:

- Force structure cuts
  - -- Lower desired pilot production capability (apprx 1200 vs 1890)
  - -- Bomber-Fighter (BF) available training slots reduced more (488 vs 888)

- T-45 procurement slip

- TAC Lead-In Fighter Training (LIFT) reduced and possibly eliminated

- BFTS developmental cost would be spread over significantly smaller fleet (approx 375 vs 900)

In order to look at other options, the AF is funding a study to examine further modifications to the T-38 as an alternative to BFTS. Avionics, aerodynamics / handling characteristics, power plant, egress systems, and oxygen system are likely to need modification. The projected modification alternative to BFTS schedule and funding strategy dovetail with JPATS and the Masterplan. Initial rough estimates show the T-38 could be modified for less than the cost of buying a new BFTS. Before the AF pursues this course, a detailed study and engineering analysis of the T-38 modernization is required. This possible future modification program is totally different, separate and apart from, and with different purpose than the PACER CLASSIC modification. PACER CLASSIC is a multi-stage improvement program to enhance flight safety. The PACER CLASSIC modification program is necessary for the following reasons:

- Ensure an airworthy platform for current training
- Meet projected flying training requirements in the near years
- Provide assets plus attrition reserve for an integrated modification

Tanker-Transport Trainer System: The T-1 is currently in the fourth year of a seven-year procurement. The first T-1 is to be delivered to Reese AFB in January 1992. SUPT will be implemented in the following sequence:

Reese AFB	Jul 92
Laughlin AFB	Nov 93
Vance AFB	Mar 95
Columbus AFB	Apr 96
Randolph AFB - Pilot Instructor Training (PIT)	Jun 93

The T-1 went through a formal Summit process culminating with CSAF review of the aircraft requirements and capabilities. With ATC's current programmatic approach to training, only the requisite necessary number of aircraft will be purchased, using the proper BF/TT absorption training capability mix. SUPT as a concept was accepted by the AF, OSD, and Congress. The T-1 is essential to implementation of that concept. As previously discussed, aircraft will be purchased in sufficient quantity to meet projected training requirements throughout the life of the system.

Conclusions:
The Masterplan is currently under a major revision to reflect the changes in the programs, requirements, plans, and policies of the involved services. However, this 1992 Masterplan will not be designed for, nor should it be used to compute aircraft requirements, to establish training objectives, to project operational requirements, or to study alternatives to current inventory strategies. The AF has already used updated UPT production rates to decrease its T-37 and T-38 fleet sizes; reduce the T-1, JPATS, and EFS buys; and has dedicated FY 92 and 93 money to study a T-38 modification as an alternative to BFTS. Future rated management decisions, and continued efforts to refine force structure requirements will play a large role in the final determination of the number of T-37s, T-38s, T-1s, JPATS and EFS aircraft projected for the 1992 Masterplan revision.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1.a. Partially Concur. ATC UTE-rate programmatics allow for an iterative and justifiable approach to fleet sizing (reductions or procurement). We agree reductions should take place, but the Masterplan is not the document which implements these programmatics adjustments.

1.b. Partially concur. The JROC and Summit are the optimum methods for defining training deficiencies and requirements as well as examining how new replacement aircraft will enhance training effectiveness. Economic analysis is part of this process.

1.c. N/A

2. N/A

3.,4.,5. Do Not Concur. Future PACER CLASSIC modifications will be done only on those aircraft necessary to sustain projected training requirements. (This is the same approach the AF used in modifying limited numbers of T-37s). Also, pending an engineering analysis and study, those T-38s may again be used for further modification in lieu of a BFTS. The AF rated requirements (training slots for available cockpits) will be an integral part of determining these requirements. The T-1 will meet the needs of the tanker-transport cockpits and the T-38 will meet the needs of the bomber-fighter requirements. Those requirements are the sole basis for determining fleet size, and it is inappropriate to withhold funds for near-term requirements in deference to out-year strategies derived from on-going studies.

Finding B. Air Force Enhanced Flight Screener

The AF did not consider the full range of training alternatives. Economic justification in the form of cost and operational effectiveness analysis (COEA) has only recently been enforced for major programs. OSD (PA&E) did not deem a COEA appropriate for the T-45. The 1988 Air Force Trainer Masterplan was deemed sufficient by the Congress to justify the T-1 program. A cost-benefit study was done for the EFS. Additionally the EFS underwent the Summit requirements process. A certified economic analysis was accomplished in accordance with DODI 7041.3 and a finalized copy is attached to the AF reply. The draft audit report overlooked a significant and fundamental benefit to the programmed acquisition of the EFS. While long-term savings will result, the most significant advantage is a reduced requirement for JPATS and T-1 aircraft and JPATS training devices in SUPT. This cost avoidance (approximately $60 million in acquisition and $100 million in life cycle costs) far exceeds the price tag of the EFS fleet.

Delaying the decision as to which SUPT track a student pilot will take until completion of T-37 training did eliminate one of the reasons for EFS, but left other cost effective reasons in place. Paybacks from reduced attrition and acquisition still apply. EFS is still an essential element pilot candidate screening and is a cost effective way of reducing attrition in UPT.

Background

The EFS received a thorough review both before and after the decision to delay classification until after T-37 training. The Summit process reviewed and identified deficiencies and determined those capabilities necessary were not available in the T-41 or through any nonmaterial solution. Neither the PCSM screening nor the use of simulators obviates the need for improved in-flight screening. (PCSM and simulator alternatives are addressed in the ATC Economic Analysis). The EFS is the best option to meet future training requirements.

Enhanced Flight Screener Statement of Operational Need (SON):
The EFS will eliminate deficient candidates at a low cost before flying the more expensive T-37 (or JPATS) and T-38 (or T-1). Even with T-41 flight screening, UPT attrition has historically varied between 20 and 30 percent. The EFS trial program run at Hondo AFB Texas last year using a cross section of average pilot candidates and a test EFS syllabus resulted in graduates who went to UPT (no flags by their names as to who attended the test program) and has achieved 100 percent success to date. The high-wing T-41 is not suitable for training overhead patterns, or certified and stressed for aerobatic maneuvers. These are typically areas which attrit large numbers of students in UPT. Other factors which will also be reduced in UPT as a result of EFS are those related to airsickness, manifestation of apprehension (MOA), and self initiated elimination (SIE). The certified Economic Analysis (attached from ATC) demonstrates the cost effectiveness of EFS.

Alternatives: The AF does not consider desk top simulators a viable option for screening or training inexperienced pilot candidates. The DoD IG Audit Report refers to an Air Force study, Hasty Blue, which recommend desk-top simulators as an effective means of replacing aircraft for flight screening. "Hasty Blue" was written in an era when the efficacy of simulation in replacing aircraft time was generally overstated. ATC's experience with simulation in UPT from 1976 through 1990 amplifies this conclusion. Forty flying hours were removed from the UPT syllabus with a commensurate increase in simulator training. Feedback from operational commands concerning the basic flying skills of UPT graduates has subsequently caused ATC to replace half of the flying hours over the ensuing years. In addition, the SUPT syllabus is programmed to replace the remainder of the deficit in order to overcome training deficiencies which still exist. The EFS program is derived from a fundamental understanding of aviation and its requirements for screening and training pilots.

Cost Analysis: The Economic Analysis demonstrate that JPATS and T-1 cost avoidance provide a compelling argument in favor of the EFS. O&S and acquisition savings overshadow the influence of commissioning costs. Since the contribution is minor, the ATC analysis makes no assumptions about the commissioning source of candidates and credits no savings in this area. The variety of causes for attrition and their historical distribution in all phases of UPT argue against the assertion that EFS would only reduce attrition in the primary phase. In the economic analysis and subsequent programming actions, we estimated approximately 80% of the improvement in attrition would be experienced in the primary phase.

Classification of Students: Classification will be determined at the end of the primary phase of UPT/SUPT. It is no longer an objective of flight screening.

Conclusion:

The AF considered viable alternatives to the EFS. The EFS is the most cost effective method of screening candidates for UPT. Good screening will yield quality UPT graduates at lower programmed attrition rates.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. Do Not Concur. The EFS is essential to reduce attrition from 20% to 15%. The EFS requirements received a thorough review through the Summit process which validated the concept, need, and payback associated with the program.

2. Concur.

4 Attachments
1. 1989 DoD Trainer Masterplan
2. ATC Aircraft Fleet Matrix
3. ATC UTE- Rate Programmatics
4. EFS Economic Analysis

AUDIT RESPONSE TO NAVY COMMENTS

The Assistant Secretary of Defense (Force Management and Personnel) believed that issues raised by the Navy needed to be addressed by a comprehensive study before Navy UHPT fixed-wing training was eliminated and DoD UHPT was consolidated at Fort Rucker. The following paragraphs respond to the Navy's comments on Findings C and D. They are keyed to the concluding statements made for each finding.

Finding C, Fixed-wing Training of Navy and Marine Corps Helicopter Pilots

Interservice Training Review Organization Study. We reviewed the Interservice Training Review Organization's (ITRO) study addressing the potential for consolidating all DoD UHPT programs at Fort Rucker. The primary weaknesses of the ITRO study were identified in the Assistant Secretary of Defense's (Force Management and Personnel) comments on Findings C and D. Specifically, the ITRO study did not fully examine opportunities for redesigning helicopter training programs, consider a core curriculum for all Army and Navy helicopter training, highlight legitimate Service-unique requirements that could be examined and priced separately, and address the possibility of using a common training helicopter. In essence, the ITRO study maintained the status quo of the Army, Navy, and Air Force helicopter training programs without considering efficiencies resulting from consolidation.

In addition, the ITRO study overstated costs associated with relocating the Navy's UHPT program to Fort Rucker. The study estimated that it would cost $19 million to relocate the Navy's UHPT program. The estimate included $10 million in costs that may not materialize. These costs were for:

- o simulators that may not have to be moved to Fort Rucker,
- o a stage field at Fort Rucker that may not require modification,
- o refueling capabilities at Fort Rucker that may not need improvements, and
- o navigation systems at Fort Rucker that may not require enhancement.

Further, Navy T-34C replacement aircraft cost savings were not included in the ITRO study. As stated in the report, cost avoidance amounting to as much as $700 million (140 JPATS

aircraft at $5 million each) could result by reducing the JPATS requirement. Even if we accepted the study's conclusion that it would cost an additional $33 million a year to train Navy UHPT students at Fort Rucker, which we do not, it would take 21 years ($700 million divided by $33 million a year of recurring costs) to recover the JPATS aircraft procurement costs.

Accordingly, the ITRO study did not provide an objective basis for determining the feasibility and cost-effectiveness of consolidating all DoD UHPT programs at Fort Rucker.

Naval Audit Service report. The Naval Audit Service, in its draft report, did conclude that Naval flight training was producing quality pilots with the proper mix of pilot and flight officers. However, the conclusion was not based on efficiency and cost-effectiveness evaluations of the UPT programs. Instead, the auditor's conclusion was based on the fact that they did not find documentation or receive oral evidence challenging the quality of Navy training programs. Also, the auditors believed that the pilot and flight officer mix was adequate because the Navy was training more students than needed. In addition, the draft report did not endorse the flight training program as claimed by the Navy's comments. The auditors reported that the Navy was not efficiently and effectively using training resources.

Screening. The Navy could use less expensive alternatives than the T-34C aircraft to screen all potential pilots into jet, propeller, and helicopter pipelines. One alternative is the Air Force's pilot screening program. The Air Force uses the T-41 aircraft to screen potential pilots. In FY 1991, the Air Force screening program for each potential pilot consisted of 14 flying hours in a T-41 aircraft costing about $1,600. At the same time, the Navy screening program for each potential pilot consisted of 66 flying hours in a T-34C aircraft costing about $14,400. In addition, the Air Force's planned pilot selection and classification system could be implemented by the Navy to screen potential Navy pilots.

Lost flying hours. We do not agree with the Navy's assertion that flight hours lost by eliminating fixed-wing training have to be added to the helicopter training syllabus. Flying hour curriculums for the Navy's T-34C aircraft and the TH-57 helicopter require similar tasks. During the audit, we asked the Army Aviation Center to compare the Navy's UHPT syllabus with the Army's UHPT syllabus. The Aviation Center identified 193 tasks performed in the Navy's T-34C aircraft and TH-57 helicopter that were performed in the Army's UH-1 helicopter during UHPT. Accordingly, many of the flying hours lost from the T-34C aircraft flying hour curriculum do not have to be repeated in the TH-57 helicopter. In addition, T-34C aircraft flying hours needed to screen potential pilots into jet, propeller, and helicopter pipelines could be replaced by less expensive alternatives.

Value of Fixed-Wing Training. We agree with the Navy's comment that fixed-wing training is beneficial for student helicopter pilots. However, training all students to be fixed-wing aviators is not cost-effective when in the past less than 155 helicopter pilots filled shore flying billets. Although the Navy claimed it would cost an additional $4.5 million a year to train helicopter pilots for fixed-wing flying billets, we estimate that the Navy spends about $31 million annually to train students who never rotate to fixed-wing flying billets.

Other Benefits From Fixed-Wing Training. We agree that fixed-wing training does provide the Navy other benefits besides enhancing student flying skills. The elimination of fixed-wing training may effect helicopter pilot accessions rates and career patterns. However, the effect is not measurable. The dynamics of the U.S. economy we believe, drive accessions. In respect to career patterns for helicopter pilots, the Navy may have to alter career objectives to mutually suit the short and long term needs of the Navy and the students.

Finding D., Relocating The Navy's Undergraduate Helicopter Pilot Training Program

Accident Rates. Naval Air Training Command accident rates should be lower. Accident rates reported by the Chief of Naval Air Training Command cannot be compared with other Navy and Marine Corps aircraft commands, and the Army's Training and Doctrine Command. Trainer aircraft seat at least two people to allow instructor pilots to advise and monitor student pilots' flight control actions. In addition, trainers are not operational aircraft. They are not combat equipped, lack high performance capability, and do not generally land on carrier decks.

The Army Training and Doctrine Command conducts both undergraduate and graduate pilot training. To make an accident rate comparison with the Army, the Navy would have to compare combined accident rates for undergraduate and graduate pilot training. The Chief of Naval Air Training Command does not train graduate pilots. Navy fleet readiness squadrons train graduate pilots.

We agree that relocating the Navy's TH-57 helicopters will increase airspace congestion at Fort Rucker. However, the additional helicopters will not saturate Fort Rucker's ground and airspace and can be safely accommodated. Also, midair collision safety statistics cited by the comments for Pensacola/Whiting Field indicated that helicopters caused only 18 percent of the reported incidents. Accordingly, we do not believe that relocating Navy helicopters will significantly effect air safety at Fort Rucker.

Relocation Efficiencies. The Navy is correct in stating that there are no cost efficiencies associated with the simple relocation of the Navy's UHPT program to Fort Rucker. However, consolidation of all DoD's UHPT programs at Fort Rucker will provide opportunities for cost savings through redesigning helicopter training programs, using a core curriculum for all Army and Navy helicopter training, using common supply and maintenance facilities and services, and using common training helicopters.

As discussed in the finding, consolidation of all DoD navigator training has demonstrated that sharing common facilities, instructors, and aircraft can be cost effective. Although Mather Air Force Base is being closed, DoD has decided to maintain this consolidated program rather than return training to the respective Services. DoD is investing $83 million to construct a new campus and an improved flight line at Beale Air Force Base to continue navigator training at one location.

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