DEPARTMENT OF DEFENSE

AUDIT REPORT

ACQUISITION OF THE MARK XV IDENTIFICATION
FRIEND-OR-FOE SYSTEM

No. 91-005

October 12, 1990

Office of the
Inspector General

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

October 12, 1990

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION
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: Report on the Audit of the Acquisition of the Mark XV Identification Friend-or-Foe System (Report No. 91-005)

This is our final report on the Audit of the Acquisition of the Mark XV Identification Friend-or-Foe (IFF) system for your information and use. Comments on a draft of this report were considered in preparing the final report. We made the audit from April 1989 through February 1990. Our overall objective was to evaluate the acquisition management of the Mark XV IFF system to determine if full-scale development efforts were adequately preparing the system for an economic and efficient production. The specific objectives were to evaluate the effectiveness of acquisition planning and execution of the program including evaluations of mission critical computer resources, integrated logistics support, schedule adequacy, test planning, cost realism versus the budget, and internal controls related to these objectives. Funding for this system was terminated in December 1989, but was reinstated on March 16, 1990, when the Deputy Secretary of Defense determined that development of the system was necessary to meet NATO and U.S. requirements. The Mark XV IFF system is a joint program with Army, Navy, and Air Force participation. As lead Military Department, the Air Force is responsible for the development of the Mark XV IFF system. In February 1989, the total estimated cost of the joint program was $4.4 billion, including about $354.6 million for research and development from FY 1992 through FY 1994.

Experienced and capable Military Department personnel managed aspects of the Mark XV IFF program well. For six of our audit objectives, either we identified no problems or the Air Force had corrected potential problems during the audit. The six objectives are summarized in Appendix A of this report. For the other three audit objectives, we identified areas of concern. Regarding schedule adequacy, the program office estimated that the contract target cost would be exceeded by $46 million. The contractor has initiated action to correct schedule problems but the program office needs to closely monitor the contractor's effort. Regarding test planning, we found that the Test and Evaluation Master Plan (TEMP) had not been approved. Following

conclusion of the audit the TEMP was approved. However, for the remaining audit objective, cost realism verses the budget, we determind that improvements and controls were still needed in the Army's identification of Mark XV IFF system requirements and in procedures used to prepare Independent Cost Analysis (ICA) estimates. The results of the audit are summarized in the following paragraphs, and the details, audit recommendations, and management comments are in Part II of this report.

Army requirements for the Mark XV IFF system were not sufficiently definitized to provide for realistic cost estimates. As a result, program requirements are understated, which may adversely affect program decisions. If the Army definitizes estimates of Mark XV IFF system requirements and revises cost estimates, the Army program baseline cost could increase by about $1.7 billion. We recommended that total program requirements be definitized and cost estimates be revised and presented to the Air Force for inclusion in the Mark XV IFF program baseline (page 5).

The ICA for the joint Mark XV IFF system was not independently developed and the joint program office estimate was not updated, as required by regulation. As a result, the Defense Acquisition Board could not adequately assess the ICA and program office estimate. We recommended that an ICA be prepared in accordance with the Air Force's Aeronautical Systems Division Regulation 173-1 and submitted to the Cost Analysis Improvement Group before the next milestone review and that the program office estimate be updated annually (page 9).

The audit identified an internal control weakness, as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Finding B. identifies the need for controls to ensure that the ICA is independently prepared. Recommendations B.1. and B.2., if implemented, will correct this weakness because they stabilize Army requirements and funding. We determined that monetary benefits will not be realized by implementing Recommendations B.1. and B.2. A copy of this report is being provided to the senior officials responsible for internal controls within each of the Military Departments.

Management comments on the draft of this report did not fully comply with the requirements of DoD Directive 7650.3. We have addressed management's position on the recommendations in the following paragraphs and in Part II of this report.

Although not required, the Director for Theater and Tactical Command, Control and Communications, in the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) provided comments and concurred with the findings and recommendations. Additional comments made by the Assistant Secretary were incorporated in this report.

The Director for Aviation, Intelligence and Electronic Warfare Systems in the Office of the Assistant Secretary of the Army (Research, Development and Acquisition) concurred with Recommendation A. to definitize total Mark XV IFF requirements, revise cost estimates, and provide the results to the Air Force for inclusion in the joint Mark XV IFF program baseline. The Army did not provide completion dates for the planned actions; therefore, the reply cannot be considered fully responsive. We request that the Assistant Secretary provide target completion dates in response to the final report.

As of October 4, 1990, the Assistant Secretary of the Air Force (Financial Management and Comptroller) had not responded to the draft of this report. We request that the Assistant Secretary respond to the final report indicating concurrence or nonconcurrence in the Finding B. and related recommendations. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, please state your specific reasons. If appropriate, you may propose alternative methods for accomplishing desired improvements.

DoD Directive 7650.3 requires that all audit recommendations be resolved within 6 months of the date of the final report. Accordingly, final comments on the unresolved issues in this report should be provided within 60 days of the date of this memorandum. This report claims no monetary benefits (Appendix E).

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact Mr. Gordon Nielsen at (703) 614-3994 (AUTOVON 224-3994) or Mr. Thomas Bartoszek at (703) 693-0481 (AUTOVON 223-0481). A list of the audit team members is in Appendix G. Copies of this report are being provided to the activities listed in Appendix H.

Edward R. Jones
Deputy Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Army
Secretary of the Navy
Secretary of the Air Force

REPORT ON THE AUDIT OF THE ACQUISITION OF
THE MARK XV IDENTIFICATION FRIEND-OR-FOE SYSTEM

TABLE OF CONTENTS

	Page
TRANSMITTAL MEMORANDUM/EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	1
Background	1
Objective and Scope	1
Internal Controls	2
Other Matters of Concern	2
Prior Audit Coverage	3
PART II - FINDINGS AND RECOMMENDATIONS	5
A. Army Requirements	5
B. Independent Cost Analysis	9
APPENDIX A - Summary of Critical Program Management Elements with Adequate Controls	13
APPENDIX B - Memorandum Reinstating Program Funding for the Mark XV Identification Friend-or-Foe System	15
APPENDIX C - Assistant Secretary of Defense (Command, Control, Communications and Intelligence) Comments	17
APPENDIX D - Department of the Army Comments	19
APPENDIX E - Summary of Potential Monetary and Other Benefits Resulting from Audit	21
APPENDIX F - Activities Visited or Contacted	23
APPENDIX G - Audit Team Members	25
APPENDIX H - Final Report Distribution	27

Prepared by:
Acquisition Management
Directorate
Project No. 9MA-0046

REPORT ON THE AUDIT OF THE ACQUISITION OF THE MARK XV IDENTIFICATION FRIEND-OR-FOE SYSTEM

PART I - INTRODUCTION

Background

The Mark XV Identification Friend-or-Foe (IFF) system is the next generation of equipment for identification of friendly aircraft. The Mark XV IFF system will replace the Mark XII IFF system, which is susceptible to jamming and exploitation and is not operable between NATO members. The Mark XV IFF is planned to be jam resistant, highly secure, NATO interoperable, and compatible with existing military and civilian systems. During full-scale development, the Mark XV IFF system will be integrated in representative platforms that include the F-18 and F-15 aircraft; the EH-60 helicopter; the Hawk missile battery; and two ships, the DD-963 (Spruance Class) and the CG-47 (Aegis Class). Development of the Mark XV IFF system is under a joint program with the Air Force designated as the lead Military Department. The Air Force joint program office is located at Wright-Patterson Air Force Base, Ohio.

In February 1989, the Air Force awarded a $154 million cost-plus-incentive-fee/award-fee contract to Allied Signal Aerospace, Inc., and used a leader follower strategy for full-scale development of the Mark XV IFF system. Allied Signal Aerospace, Inc., was the leader and Raytheon the follower. The leader follower strategy provides that at the end of full-scale development, the transfer of technology between the leader and the follower will occur and both will compete during production. The contract included a $116 million low-rate initial production option.

Funding for this program was terminated in December 1989, but was reinstated on March 16, 1990, by the Deputy Secretary of Defense when he determined that program development was necessary to meet United States and NATO requirements (Appendix B).

Objective and Scope

The overall audit objective was to evaluate the acquisition management of the Mark XV IFF system to determine if full-scale development efforts were adequately preparing the system for an economic and efficient production. The audit was made in accordance with our critical program management elements approach. Under this approach, we focused our evaluation on nine program management elements and related internal controls that are integral to the early full-scale development phase. We made this audit from April 1989 through February 1990.

This program audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of internal controls as were deemed necessary. We reviewed data and information from 1984 to 1990, and interviewed personnel involved in the acquisition of the Mark XV IFF system. During the audit, the Technical Assessment Division, Office of the Assistant Inspector General for Auditing, provided assistance in the mission critical computer resources and testing area. A list of activities visited or contacted during the audit is in Appendix F.

Internal Controls

We reviewed internal controls as were deemed necessary for the stated objectives. Except for the lack of independence in the development of a joint program Independent Cost Analysis (ICA) that was presented to the Cost Analysis Improvement Group, we found internal controls to be adequate and in accordance with applicable Public Law, and DoD and Air Force policies and procedures.

Prior Audit Coverage

The General Accounting Office (GAO) issued Report No. C-NSIAD-86-18 (OSD Case No. 6840-A), "Aircraft Identification; Improved Aircraft Identification Capabilities: A Critical Need," on August 11, 1986. GAO made the review to determine if air defense weapon system operators will be able to effectively use their weapons under all combat conditions, joint Service programs established by DoD to develop improved identification capabilities have been effective, and if more could be done to use existing systems more effectively. GAO found that the United States and NATO air defenders could not distinguish friendly aircraft from enemy aircraft, little progress had been made to field improved identification capabilities, and the Army and Air Force did not use their present system to full capability. In this report, GAO recommended that the Secretary of Defense elevate the Combat Identification System Program Office (program office) to a higher level of authority within DoD to ensure that more attention would be given to identifying requirements for air defense weapons. Also, GAO recommended that the Secretary of Defense direct the Secretaries of the Military Departments to support the program office by providing the personnel necessary to carry out the development program. Two other recommendations focused on increasing the effectiveness of the Mark XII IFF system during the development of the Mark XV IFF system. The Secretary of Defense recognized the need to reexamine the program office's organizational placement, and stated that action would be taken

to provide the necessary personnel for that program. The audit and all recommendations were resolved.

A December 15, 1983, memorandum, "Subject, Review of Mark XV Cooperative Identification System," from the Assistant Inspector General for Auditing to the Under Secretary of Defense for Research and Engineering, provided that NATO allies did not agree on whether the Mark XV IFF system under development would be the solution for a NATO interoperable combat identification system. A basic issue was that NATO did not agree to the operating frequency for the new system. An agreement on the frequency was reached in early 1990. Another issue was that the Military Departments had not developed a unified position regarding the need for the Mark XV IFF system. The Military Departments have recognized the need for the Mark XV IFF and have established requirements, but this matter remains open because the Army and the Defense Acquisition Board have not agreed on what systems require the Mark XV IFF.

Other Matters of Concern

We identified potential audit issues relating to work schedule adequacy and detailed test planning, for which corrective action was taken during the audit, but where continued management oversight is needed.

Work Schedule. Our audit disclosed that the contractor had not fully integrated the work schedule to identify items on the critical path. This, along with the addition of new staff members, unfilled vacancies, and optimistic planning schedules resulted in a cost and schedule variance. The contractor initiated action to integrate the work schedule and fill vacancies. These are steps forward, but the program office must closely monitor the contractor's actions because the program office expects the contractor to exceed the contract target cost by $46 million.

Test Planning. The Test and Evaluation Master Plan (TEMP) remained disapproved at the conclusion of the audit although progress had been made toward its acceptance. One major issue was interoperability. NATO established an identification working group with members from five nations to resolve test issues. However, a lead nation has not been designated to manage, plan, and coordinate interoperability testing of the system. In addition, the Military Departments had not assigned test assets. At the time of the audit, a study was underway to reevaluate the test flight hours and the possibility of combining test objectives to accomplish Military Department required scenarios. OSD was reviewing the outstanding TEMP issues. Subsequent to the completion of our audit OSD approved the TEMP.

PART II - FINDINGS AND RECOMMENDATIONS

A. Army Requirements

FINDING

Army requirements for the Mark XV Identification Friend-or-Foe (IFF) system were not sufficiently definitized to provide for realistic cost estimates. After the Defense Acquisition Board (DAB) directed the Army to plan for procurement of the Mark XV IFF for attack helicopters, the Army did not update its program baseline requirements and cost estimates to include attack helicopters and other aircraft that could use the Mark XV IFF system. As a result, the program requirements are understated, which may adversely affect program decisions. If the Army definitizes current estimates for Mark XV IFF system requirements and revises cost estimates, the Army program baseline cost could increase by about $1.7 billion.

DISCUSSION OF DETAILS

Background. DoD Directive 5000.1, "Major and Non-Major Defense Systems," September 1, 1987, provides that requirements for new acquisitions shall be thoroughly reviewed and validated. The Military Departments are to provide realistic long-range planning and program budget estimates for DAB reviews at milestone decision points. At milestone decision points, the DAB examines program estimates and makes recommendations on the readiness of a program to proceed to more advanced stages of development or production.

The Mark XV IFF is a combat identification system consisting of interrogators, transponders, processing equipment and related antenna. The equipment operator uses interrogators to ask for identification, and transponders, when interrogated, reply. Interrogators and transponders may be installed on aircraft, ships, and other weapon platforms. The mission need for the Mark XV IFF system was largely defined by the Mark XII IFF system's inherent reliability deficiencies in identifying friendly platforms in a military environment.

Program Baseline. In December 1988, the Army presented requirements of 649 transponders and 357 interrogators to the DAB for consideration. The January 7, 1989, approved baseline for the Mark XV IFF program shows that the Army identified requirements for 588 transponders and 331 interrogators. In February 1989, a DAB memorandum directed the Army to include transponders on attack helicopters in its procurement planning. In response to the DAB's direction, the Army Missile Command reviewed requirements for attack helicopters, utility and cargo helicopters, and other Army systems. An October 1989 Army review

identified Mark XV IFF system requirements for 5,907 transponders and 2,387 interrogators at a total life-cycle cost of $2.7 billion and $1.4 billion, respectively. Although the study showed a need for 2,387 interrogators, the Army claimed its estimate of 357 interrogators (presented to the DAB) was appropriate.

In a January 5, 1990, memorandum to the Office of the Inspector General, the Army Office of the Deputy Chief of Staff for Operations and Plans indicated that it had reduced requirements for transponders from 5,907 to 4,170. This is the latest estimate for transponders. The Army did not have an estimated cost for the 4,170 transponders. However, an informal Army estimate showed that the increase of transponder requirements from 649 to 4,170 transponders would cost an additional $1.7 billion.

The Army's rationale for reducing transponder requirements was that the UH-1 and AH-1 helicopters included in the October 1989 requirements will be retired in 2005 and 2010, respectively. The replacement for the UH-1, the UH-60, is included in the Army's requirement for 4,170 transponders. The replacement for the AH-1, the LHX helicopter, will not have the Mark XV IFF transponder, but a transponder that will be compatible with the Mark XV IFF. The Army's planned Initial Operational Capability milestone for the Mark XV IFF system is FY 1997.

The Army's additional requirements were not included in revised cost estimates for the joint Mark XV IFF system program and were not presented to the Under Secretary of Defense for Acquisition for approval of a new program baseline. Accordingly, the program baseline is understated.

Conclusion. In less than 2 years, the Army increased its Mark XV IFF requirements for transponders from 649 to 4,170, at an estimated cost increase of $1.7 billion. The Army needs to definitize and communicate these requirements to the joint program office for inclusion in the program baseline to help make better decisions on cost estimates and budgets.

RECOMMENDATION FOR CORRECTIVE ACTION

We recommend that the Assistant Secretary of the Army (Research, Development and Acquisition) require the Deputy Chief of Staff for Operations and Plans to definitize total Army Mark XV Identification Friend-or-Foe program requirements and revise cost estimates, and provide the results to the Air Force for inclusion in the joint Mark XV Identification Friend-or-Foe program baseline.

MANAGEMENT COMMENTS

The Director for Aviation, Intelligence and Electronic Warfare Systems in the Office of the Assistant Secretary of the Army (Research, Development and Acquisition) concurred with comment in an interim response to the draft report. The Army comments provided that requirements are being definitized, but that the process has not been completed. The Army defined Mark XV IFF requirements as 535 transponders and 66 interrogators.

Although not required to do so, the Director for Theater and Tactical Command, Control and Communications, in the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) concurred with the finding and recommendation. The complete text of the Army's comments is in Appendix D, and the Director's comments are in Appendix C.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The Army's comments are not fully responsive. The Army comments do not provide target dates for completing recommended actions to definitize Mark XV IFF program requirements and to submit revised cost estimates to the Air Force. We also noted that the Army response excluded Mark XV IFF requirements for attack helicopters even though in February 1989, the DAB directed the Army to include the requirements in procurement planning. The Army estimate provided to us totaled 535 transponders, which was substantially less than its previous minimum estimate to us of 4,170. The Army and the DAB need to agree on what systems require the Mark XV IFF before requirements and program baselines can be definitized. Also, the Army did not notify the DAB that its requirements exclude attack helicopters. Accordingly, we request that the Army provide these specifics in response to this final report.

B. Independent Cost Analysis

FINDING

The Independent Cost Analysis (ICA) for the joint Mark XV IFF system was not independently developed and the joint program office estimate was not updated, as required by Aeronautical Systems Division Regulation. This occurred because ICA procedures were not followed when the Navy program office's estimate was used by the Air Force instead of the independent analysis prepared by the Naval Center for Cost Analysis (the Naval Center) for the Navy's portion of the program. Also, the joint program office misinterpreted a message from the Secretary of the Air Force and adopted the Air Force ICA as its estimate rather than appropriately updating its own 1987 joint program office estimate. As a result, the DAB could not adequately assess the ICA and program office estimate.

DISCUSSION OF DETAILS

Background. The Air Force was designated lead Military Department by the Joint Requirements Oversight Council for the Mark XV IFF system, and in December 1987 was assigned the responsibility of assembling and consolidating all of the Military Departments' independent estimates into one joint program ICA. Air Force Regulation 173-11, "Independent Cost Analysis Program," provides that it is the lead command's responsibility to ensure that the ICA is independently developed by a team of Military Department representatives separate from the program offices responsible for acquisition of the system. According to DoD Directive 5000.4, "OSD Cost Analysis Improvement Group," the ICA is submitted to the Cost Analysis Improvement Group (CAIG) so that it can assess the reasonableness of cost estimates. The CAIG compares the ICA to the program office estimate and submits a report to the DAB on the reasonableness of the estimates.

The Navy was responsible for providing an independent estimate for its segment of the Mark XV IFF program to the Air Force's joint program ICA. The Naval Center is the Navy's independent agency responsible for preparing estimates independent of the Navy program offices.

Development of Cost Analysis. As the lead Military Department, the Air Force was to ensure that the joint program ICA for the Mark XV IFF system was independently derived. However, the Air Force found that the Navy portion of the joint program ICA was not independent because a Navy program office estimate was used.

Independent Participation. In a May 31, 1988 message from the Director of Cost and Economics in the office of the Air Force

Comptroller, the Army and Navy were requested to participate with the Air Force in the preparation of the joint program ICA. The Navy program office sent one of its contractors as a representative. The Air Force was to ensure that the joint program ICA for the Mark XV IFF system was independently developed by a team of representatives who were independent of the Military Departments' program offices. The Air Force was aware that the contractor represented the Navy program office and not the Naval Center. The use of a contractor responsible to the Navy program office on the joint program ICA team violated the intent of Air Force Regulation 173-11.

Navy Estimate. Although the Naval Center provided an independent estimate, the Navy program office estimate was used because the Air Force claimed the Naval Center estimate was not received in time to be included in the joint program office ICA.

The joint program office's use of the Navy program office estimate, instead of the Naval Center's independent cost estimate, may have resulted in a program cost overstatement of $59 million for production and full-scale engineering development (FSED), as shown below.

Estimate Category	Naval Program Office Estimate (Millions)	Naval Center Estimate (Millions)	Difference (Millions)
Production	$1,207	$1,144	$63
FSED	125	129	(4)
Net Difference			$59

On December 2, 1988, the joint program office presented a summary ICA to the CAIG. On February 2, 1989, the CAIG recommended that the joint program office provide a detailed ICA within 60 days of the DAB's Acquisition Decision Memorandum. The joint program office provided the details to the CAIG on March 22, 1989. The CAIG and the DAB were unaware that the ICA included the Naval program office's estimate, instead of an estimate independently developed by the Naval Center.

Air Force Program Office Estimate. Air Force Regulation 173-11, provides that an ICA should be used to test the reasonableness of a program office's estimate and provide additional cost information to support program management decisions. The Air Force program office did not prepare a separate program office estimate in 1988, but adopted the ICA prepared by the Directorate of Cost Analysis, Comptroller, Wright-Patterson Air Force Base, as its estimate. Program office personnel explained that they received direction from the Secretary of the Air Force in a message dated May 31, 1988, which

provided that the ICA ". . . be compared to the most current program office estimate prior to source selection with an explanation of changes by the ICA team." Program office personnel misinterpreted this as a waiver from the Secretary of the Air Force to update their annual program office estimate, as required by Aeronautical Systems Division Regulation 173-1, "Aeronautical Systems Division Cost Analysis Program," January 1989. Thus, personnel used the latest program office estimate available, the calendar year 1987 estimate of $1.034 billion, and compared it to the ICA estimate of $819 million to test the ICA for reasonableness, as intended by the Secretary's message, but did not update the 1987 program office estimate. The difference of $215 million was explained as required by DoD Directive 5000.4, "OSD Cost Analysis Improvement Group." The lower ICA estimate of $819 million was accepted because the program office believed it represented the most probable life-cycle costs. At the conclusion of the audit, the program office was preparing an updated estimate.

We concluded that the Air Force message did not relieve the program office of its responsibility to prepare a separate program office estimate and update the estimate annually, as required by Aeronautical Systems Division Regulation 173-1. The ICA estimate and the program office estimate are to be developed separately so that decisionmakers can make an adequate assessment of the reasonableness of program costs.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Commander, Air Force Systems Command:

1. Prepare an Independent Cost Analysis of the Mark XV Identification Friend-or-Foe system in accordance with Air Force Regulation 173-11, "Independent Cost Analysis Program," that includes Army, Navy, and Air Force independent cost estimates and submit the analysis to the Cost Analysis Improvement Group before the next milestone review.

2. Direct the Air Force's Mark XV Identification Friend-or-Foe program office to update its program office estimate annually in accordance with Aeronautical Systems Division Regulation 173-1, "Aeronautical Systems Division Cost Analysis Program."

MANAGEMENT COMMENTS AND AUDIT RESPONSE

The Assistant Secretary of the Air Force (Financial Management and Comptroller) was provided a draft of this report on June 2, 1990, for comment. As of August 28, 1990, the Assistant Secretary had not responded to the draft report. We

request that the Assistant Secretary respond to the final report indicating concurrence or nonconçurrence with the recommendations, as required by DoD Directive 7650.3.

Although not required to do so, the Director for Theater and Tactical Command, Control and Communications, in the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) concurred with the recommendations. The complete text of the Director's comments is in Appendix C.

SUMMARY OF CRITICAL PROGRAM MANAGEMENT ELEMENTS WITH ADEQUATE CONTROLS

During the survey phase of the audit, we determined that additional audit work was not required in mission critical computer resources, system design reviews and audits, force structure integration, program management organization, manufacturing, and logistics. A discussion of these areas follows.

Mission Critical Computer Resources. As required by the program office and the contract requirements, the contractor and the program office were working toward the acceptance of the software development plan and the software quality assurance plan. In addition, verification and validation procedures were under development.

System Design Reviews and Audits. The plans and schedules for program management reviews had been established and appeared reasonable. The Air Force program office was taking action on the results of all other reviews, including the Milestone II review.

Force Structure Integration. The Military Departments were actively participating in plans to integrate the Mark XV Identification Friend-or-Foe (IFF) system into the requirements and the program design process through their input to the Production Installation Requirements Plan. In addition, an independent agency had been selected to oversee operational test and evaluation of the Mark XV IFF system. We believe that the plans are adequate.

Program Management Organization. The structure of the program office organization is considered adequate. Sufficient support and staffing were documented.

Manufacturing. The program office was providing adequate oversight for the manufacturing effort. The program office Management Manufacturing Directorate reviewed the manufacturing management plan and the producibility plan. Action was taken to have the prime contractor correct noted inadequacies in the plan.

Logistics. During the audit, we reviewed the request for depot determination, the integrated logistics support plan, the breakout plan, and the support equipment plan. We also reviewed breakout and training. Planning and internal controls appeared adequate.

THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D C 20301

16 MAR 1990

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN, JOINT CHIEFS OF STAFF
UNDER SECRETARY OF DEFENSE (ACQUISITION)
UNDER SECRETARY OF DEFENSE (POLICY)
ASSISTANT SECRETARY OF DEFENSE (C^3I)
ASSISTANT SECRETARY OF DEFENSE (PA&E)
DOD COMPTROLLER

SUBJECT: MARK XV/NATO Identification System (NIS)

As a result of the Mark XV review held on March 13, 1990, I have decided that the program will continue. Development will proceed without delay to meet US and NATO requirements, as long as our Allies remain active participants in the NIS effort. It should be recognized, however, that significant changes in the fiscal or international political environments could influence the future course of this program.

The Assistant Secretary of Defense for Command, Control, Communications and Intelligence, in coordination with the Under Secretary of Defense for Policy, will maintain contact with our Allies to advance our mutual interests on Mark XV/NIS. Design modifications should be negotiated with the Allies to reduce total program costs and to reflect the changed nature of the threat. The Chairman of the Joint Chiefs of Staff will coordinate any performance reductions resulting from these negotiations. Upon completion of negotiations, the Secretary of the Air Force will submit a revised program baseline to the Under Secretary of Defense for Acquisition.

The Comptroller will insure that adequate funding is available to support the Mark XV through the balance of this fiscal year, and will determine the means of funding the program in fiscal year 1991. The Secretaries of the Military Departments will include the necessary funds in their Program Objective Memoranda due April 30, 1990 to achieve a Mark XV Milestone IIIA decision in fiscal year 1994.

D J Atwood

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D C. 20301

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

9 AUG 1990

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT, OFFICE OF THE DOD INSPECTOR GENERAL

SUBJECT: Draft Report on the Audit of the Acquisition of the Mark XV Identification Friend-or-Foe System (Project No. 9MA-0046)

With reference to your memo of June 29, 1990, on this subject, we concur with the findings and recommendations of the report. We will work with other cognizant offices to insure that an Independent Cost Analysis is prepared prior to the next milestone review, and that estimates for Army production quantities are appropriately definitized.

For reasons of accuracy, we suggest two minor revisions to the report. On the first page (line eight), change "developed for certain platforms" to "integrated in representative platforms", since the Mark XV is being developed for a much larger number of platforms than those mentioned. Additionally, on page 7 (line four) change "directed the Army to use the Mark XV on attack helicopters" to "directed the Army to plan for procurement of the Mark XV for attack helicopters". The Decision Memorandum of Feb 2, 1989, recognized that this issue was still open, but directed the Army to include attack helicopters in procurement planning until the issue is resolved.

Richard G. Howe

Richard G. Howe

AUG 10 1990

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

SARD-SA 4 Sep 90

MEMORANDUM FOR DEPARTMENT OF DEFENSE, ASSISTANT INSPECTOR GENERAL FOR AUDITING

SUBJECT: Interim Response to Draft Report on the Audit of the Acquisition of the Mark XV Identification Friend-or-Foe (IFF) System (Project No. 9MA-0046)

1. Review of subject Draft Department of Defense Inspector General (IG) Audit Report indicates Army response is required for Finding A: Army Requirements.

2. The Army concurs with comment. The Army entered the Mark XV program with an approved Baseline Cost Estimate (BCE). Excursions from this baseline resulted from Defense Acquisition Board directions to include transponders for attack helicopters in procurement planning.

3. Further evaluation of the Army's Mark XV requirement defines the following transponder and interrogator needs in priority:

a. Special Operations Aviation (SOA) Aircraft	:	74 transponders
b. Special Electronic Mission Aircraft (SEMA)	:	170 transponders
c. Medivac Aircraft	:	60 transponders
d. Operational Support Aircraft (OSA)	:	231 transponders
e. Total	:	535 transponders
Total Mobile Interrogators	:	66 interrogators

4. This requirement is articulated in MSG, CDRUSAAVNC, Ft Rucker, AL//ATZQ-CD//, DTG 281200Z AUG 90. Headquarters TRADOC has verbally concurred and this office is awaiting written concurrence.

HARRY E. CRYBLSKEY
COLONEL, GS
Director for Aviation,
Intelligence and
Electronic Warfare Systems

SUMMARY OF POTENTIAL MONETARY AND OTHER BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.	Defined Army requirements. Economy and efficiency benefit.	Nonmonetary. Definite Army requirements would enhance program stability.
B.1.	Cost analysis will be independent. Compliance with regulation or laws.	Nonmonetary. Submission of an independent cost analysis made in accordance with regulations would provide decisionmakers estimates needed to determine program costs.
B.2.	Updated program office estimate. Compliance with regulation or laws.	Nonmonetary. Submission of updated annual estimates would provide decisionmakers the estimates needed to determine program stability.

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Joint Chiefs of Staff, Washington, DC
Assistant Secretary of Defense (Program Analysis and Evaluation), Washington, DC
Assistant Secretary of Defense (Command, Control, Communications and Intelligence), Washington, DC
Director, Operational Test and Evaluation, Washington, DC
Director, Defense Research and Engineering, Washington, DC

Department of the Army

Office of the Assistant Secretary of the Army (Research, Development and Acquisition), Washington, DC
Mark XV IFF Army Program Office, Dayton, OH

Department of the Navy

Headquarters, Department of the Navy, Washington, DC
Mark XV IFF Navy Program Office, Washington, DC
Naval Center for Cost Analysis, Washington, DC

Department of the Air Force

Office of the Assistant Secretary of the Air Force (Acquisition), Washington, DC
Mark XV IFF Program Office, Aeronautical Systems Division, Wright-Patterson Air Force Base, OH
Air Force Operational Test and Evaluation Center, Albuquerque, NM
Tactical Air Command, Langley, VA
Comptroller, Aeronautical Systems Division, Wright-Patterson Air Force Base, OH

Other Defense Activities

Defense Contract Audit Agency, Towson, MD
Defense Contract Audit Agency, Marlborough, MA
Defense Contract Administration Services Plant Representative Office, Marlborough, MA
Defense Logistics Agency, Alexandria, VA
Defense Contract Administration Services Management Area, Baltimore, MD

Non-Government Activities

Raytheon Equipment Division, Marlborough, MA
Allied Signal Aerospace, Inc., Bendix Communications Division, Towson, MD

AUDIT TEAM MEMBERS

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Thomas Bartoszek, Project Manager
Teri Clarke, Team Leader
Barbara Wright, Team Leader
Martin Gordon, Auditor
Robert Johnson, Auditor
Guy Campanella, Auditor
Elizabeth Lucas, Auditor