Audit Report

OFFICE OF THE INSPECTOR GENERAL

DOD MANAGEMENT OF ELECTRONIC WARFARE THREAT SIMULATORS FOR TRAINING

Report Number 92-125

July 15, 1992

Department of Defense

The following acronyms are used in this report.

ASET IV.....Aircraft Survivability Equipment Trainer IV
ATTES.....Advanced Tactical Threat Emitter System
CROSSBOW-S.....Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union
DDDRE(T&E).....Deputy Director, Defense Research and Engineering (Test and Evaluation)
EC.....Electronic Combat
EW .....Electronic Warfare
EXCOM .....Executive Committee on Threat Simulators
GAO.....General Accounting Office
MAC.....Military Airlift Command
MAEWR .....Mid-Atlantic Electronic Warfare Range
MATS.....Mobile Advanced Threat System
MCG.....Master Control Group
MUTES.....Multiple Threat Emitter System
REU.....Remote Emitter Unit
SAC .....Strategic Air Command
STRC.....Strategic Training Route Complex
TAC .....Tactical Air Command
TACTS.....Tactical Aircrew Combat Training System
TR.....Training Regulation
TRES.....Threat Radar Emitter System
UMTE.....Unmanned Threat Emitter

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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ARLINGTON, VIRGINIA 22202-2884

July 15, 1992

MEMORANDUM FOR COMPTROLLER, DEPARTMENT OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
INSPECTOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Report on the Audit of the DoD Management of Electronic Warfare Threat Simulators for Training (Report No. 92-125)

We are providing this final report for your information and use. Comments on the draft of this report from the Office of the Secretary of Defense and the Departments of the Army, Navy, and Air Force were considered in preparing the final report. DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Director, Defense Research and Engineering and the Air Force provide final comments on the unresolved recommendations within 60 days. See the "Status of Recommendations" section at the end of each finding for the unresolved recommendations and the specific requirements for your comments.

We appreciate the courtesies extended to the audit staff. If you have any questions on this audit, please contact Mr. Raymond A. Spencer, Program Director, at (703) 693-0595 (DSN 224-0595) or Mr. Michael E. Simpson, Project Manager, at (703) 614-7300 (DSN 224-7300). Appendix E lists the planned distribution of this report.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosure

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

Office of the Inspector General

AUDIT REPORT NO. 92-125 **July 15, 1992**
(Project No. 1AB-0032)

DoD MANAGEMENT OF ELECTRONIC WARFARE THREAT SIMULATORS FOR TRAINING

EXECUTIVE SUMMARY

Introduction. Electronic warfare (EW) threat simulators include equipment used to represent enemy air defense weapon systems. Advanced threats are highly capable systems of the Commonwealth of Independent States, such as the self-propelled 2S6 antiaircraft artillery gun and various surface-to-air missile systems. For training scenarios, EW threat simulators let aircrews face a variety of realistic EW threats and evaluate their countermeasures performances. The goal of the Military Departments is to train aircrews to reduce combat losses and enhance mission success. The Military Departments have budgeted $1.5 billion to develop EW threat simulators for training during FYs 1989 through 1997.

Objectives. The overall audit objectives were to:

o evaluate the effectiveness of DoD management of EW threat simulators for training,

o determine the potential for duplication and joint military use of EW threat simulators for training, and

o evaluate applicable internal controls.

Audit Results. Our audit identified three reportable conditions.

o The Air Force Tactical Air Command lacks the EW threat simulator assets required to provide adequate EW training to east coast aircrews, which could result in reduced readiness (Finding A).

o The Military Departments were risking unnecessary duplication by developing separate EW threat simulators for training (Finding B).

o The fire-suppression contract at the Dare County Bombing Range, North Carolina, was not cost-effective (Finding C).

Internal Controls. Material internal control weaknesses existed for reviewing and coordinating the Military Departments' acquisition plans for advanced threat simulators for training (Finding B). Part I discusses our review of internal controls.

Potential Benefits of Audit. The Air Force can provide more effective EW training to east coast aircrews by realigning its EW threat simulator assets and by using the Navy's EW range to the fullest extent. Finding A had no monetary benefits, and monetary benefits for Findings B and C could not be quantified.

Summary of Recommendations. We recommended reviewing the location of all training EW threat simulators and realigning training assets, consolidating funding for all training and testing of EW threat simulators under one program, adding internal controls that require reviewing selected EW threats, and conducting a cost-benefit analysis of the fire-suppression contract at the Dare County Bombing Range.

Management Comments. The Director, Test and Evaluation, Office of the Under Secretary of Defense, concurred with the intent of Recommendations B.1., B.2., and B.3. and recommended that they be restructured and renumbered. We agreed. The changes did not affect the intent of the original recommendations. The Air Staff concurred with Findings A and C and provided comments on the recommendations. The Departments of the Army, Navy and Air Force provided unsolicited comments to Finding B, disagreeing with the facts presented. Part IV contains the complete text of all management comments.

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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, at 703-614-6303 (DSN 224-6303).

PART I - INTRODUCTION

Background

Electronic warfare (EW) threat simulators for training expose aircrews to an electronic combat environment and assist them in preparing for successful penetration of actual threat air defenses. The Military Departments train aircrews using equipment that simulates threat air defenses. In some cases, the equipment provides feedback to aircrews on their performance. The Military Departments have programmed $1.5 billion for EW threat simulator development, acquisition, and upgrade during FYs 1989 through 1997. The DoD Executive Committee on Threat Simulators (EXCOM) and the Construction of a Radar to Operationally Simulate Signals Believed to Originate Within the Soviet Union (CROSSBOW-S) Committee provide oversight of air defense threat simulators, including ones for training. These committees coordinate air defense threat simulator requirements and reduce or eliminate duplication of threat simulators.

Objectives

The overall audit objectives were to evaluate the effectiveness of the DoD management of EW threat simulators for training; determine the potential for duplication and joint military use of EW threat simulators for training; and evaluate applicable internal controls. Detailed results of our review are presented in Part II.

Scope

This economy and efficiency audit was made from March 1991 through November 1991 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. We obtained and reviewed data for FYs 1977 to 1991 on seven EW threat simulator programs for training. We interviewed Military Department and contractor officials involved in the acquisition and development of EW threat simulators. The activities visited or contacted during the audit are listed in Appendix D.

Internal Controls

We assessed internal control procedures implemented to avoid unnecessarily duplicating EW training systems. We also evaluated internal control techniques, such as acquisition plans, written policies and procedures, and various mechanisms for review of the Threat Simulator Program. The audit

identified material internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not in place to review and coordinate the Military Departments' acquisition plans for advanced EW threat simulators for training (Finding B). Recommendations B.1. and B.2., if implemented, will correct these weaknesses. A copy of the final report will be provided to the senior official responsible for internal controls within each Military Department.

Prior Audits and Other Reviews

Two previous audits evaluated the overall management of the Threat Simulator Program:

o General Accounting Office (GAO) Report No. GAO/NSIAD-88-93 (OSD Case No. 7424), "Electronic Warfare, Multiple Developments of Costly Threat Simulators," February 1, 1988; and

o Department of Defense Inspector General (DoDIG) Report No. 90-089, "Audit of the DoD Management of Threat Simulators," June 27, 1990.

Appendix B details the reports for these audits. Finding B repeats a finding in DoDIG Report No. 90-089. Management has not taken corrective action on that report's recommendations, which were reported as still open in the March 1992 DoDIG semiannual report to the Congress.

PART II - FINDINGS AND RECOMMENDATIONS

A. ELECTRONIC WARFARE TRAINING ASSETS

The Air Force Tactical Air Command (TAC) did not have the EW threat simulator assets required to train aircrews on the east coast effectively. In addition, TAC was not using existing Navy training assets to offset this shortfall. This condition existed because the Navy and Air Force had not worked out scheduling problems at the Navy training range, and the Air Force had not efficiently managed its EW threat simulator assets. As a result, opportunities for the Air Force to maintain or increase EW readiness of east coast TAC aircrews was reduced while the Navy's EW range complex on the east coast was underused.

DISCUSSION OF DETAILS

Background

The EW threat to the United States and its allies has grown over the years. The armed forces of the Commonwealth of Independent States and its allies have made great strides in the area of EW and are fielding technologically advanced air defense weapons, such as the antiaircraft artillery and the surface-to-air missile.

In order to counter enemy threats, the Military Departments simulate enemy EW threat weapon systems in training scenarios that provide tactical aircrews with the opportunity to face a variety of realistic EW threats and to evaluate the performance of EW countermeasures. According to the Air Force study, "TAC Home Base Electronic Combat Training Alternatives," 1989, "the challenge is to develop an Electronic Warfare training program that will produce trained aircrews proficient enough to effectively employ their EW equipment, survive expected threats, and deliver weapons on target." According to the Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union (CROSSBOW-S) Committee, it is imperative that sufficient simulators be made available to represent the threat adequately. Otherwise, there would be uncertainty about the survivability, vulnerability, and effectiveness of our weapon systems; a lack of confidence in our tactics and doctrine; low crew proficiency; and a loss of technological advantage. It is also important that pilots and aircrews receive the proper electronic combat (EC)/EW training at frequent intervals to ensure combat proficiency. A pilot is introduced to EC/EW during initial aircraft qualification training by learning the threat limitations and capabilities that the enemy is employing.

Tactical Air Command Training Philosophy

Since future battlefields are expected to be filled with highly technical threat emitters, aircrew survival and mission effectiveness rest on a pilot's ability to cope with these threat emitters while performing weapons delivery. TAC Training Regulation (TR) 51-50, "Flying Training Tactical Aircrew Training," October 1979, required that a specific number of EW training sorties* be flown in order to maintain qualified aircrews. In January 1990, the TAC TR 51-50 section that required a specific number of sorties was deleted. According to TAC Headquarters officials, the airwings could not comply with TAC TR 51-50 because of a lack of training simulators and range time; therefore, the requirements were deleted.

Our review showed that F-4G aircrews stationed at Seymour Johnson Air Force Base, North Carolina, were required to fly 20 EC sorties every 6 months. The sorties were usually flown against the "Sentry Dawg" emitter at the Dare County Bombing Range, North Carolina. However, when the F-4G's were replaced by F-15E's, which do not recognize the Sentry Dawg's signal as unfriendly, aircrew EC training using emitters was reduced. Also, TAC TR 51-50, does not identify the number of sorties to be flown but does state: "The objective of EC/EW training is to enhance aircrew ability to conduct offensive and defensive operations in an electronic environment . . . and that training missions should typically include EW-oriented operations and considerations."

Electronic Combat/Electronic Warfare Training Assets on the East Coast

The Air Combat Command (formerly TAC) aircraft are located at 17 bases in the United States, and approximately 1,328 fighter aircraft are stationed at these bases. Of these aircraft, 859 are F-15's and F-16's. As of June 1991, 563 (66 percent) of these fighter aircraft were located on or near the east coast where there are no Air Force EW training assets available. The TAC did not have any EW threat simulators/emitters on an east coast range that could provide the level of training that TAC TR 51-50 requires. Of the 13 aircrew training ranges located in the United States, only 2, Saylor Creek, Idaho, and Nellis Air Force Base, Nevada, have EW threat simulators for training. The other 11 ranges are primarily used for high and low level bombing and strafing.

Although the Saylor Creek range is primarily a "bomb and shoot" range, the two EW threat simulators on the range can be used by the Air Combat Command, the Air National Guard, and the Navy.

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* A sortie is one round-trip mission, including takeoff and a landing, flown by an aircraft.

However, our review showed that there are no funds in the FY 1992 budget to operate the two EW threat simulators.

Nellis Air Force Base is a fully instrumented training range where aircrews learn various aspects of EW in a training arena. Realistic training is conducted using EW threat simulators (early warning, ground intercept, height finders, antiaircraft artillery and surface-to-air radars, unmanned threat emitters, visual cues, and communication jammers), surface targets, air-to-surface targets, and force integration.

Also, because of the lack of simulator assets, EC/EW training on the east coast is accomplished during normal sorties, as the flight leader calls out imaginary threats for the pilots to practice electronic countermeasures. In our opinion, this is not realistic and provides lower quality training as compared to flying over a simulator and having the threat identified by radar warning receiver equipment.

Alternatives

Although we found a lack of training EW threat emitters at Air Force locations on the east coast, there were several options open to increase the realistic training desired. For example, the Navy has an EC/EW range that could be shared, and the Air Combat Command has former TAC and Strategic Air Command (SAC) assets that could most likely be shared. A discussion of these alternatives follows.

Navy's Mid-Atlantic Electronic Warfare Range. The Mid-Atlantic Electronic Warfare Range (MAEWR) Complex, is located near the Marine Corps Air Station, Cherry Point, North Carolina. Our review showed that the MAEWR has recently been upgraded to provide the latest training systems to simulate and evaluate combat conditions and procedures. These training systems include Weapons Impact Scoring, Acoustical Strafing Scoring, EW Threat Emitters, Tactical Aircrew Combat Training Systems (TACTSs), and land and sea targets. The MAEWR provides an operationally oriented, combat-like range facility. Multiple air and ground participants can accomplish integrated EW training missions to support aircrew training in a realistic EW environment. The TACTS interfaces with both manned and unmanned EW threat simulators, which are strategically placed throughout the range and can reproduce a number of major scenarios. Our review of Navy range-utilization reports showed that for the third quarter of FY 1990 through the first quarter of FY 1991, the average utilization rate for the MAEWR was 22 percent. The Navy and Marines Corps were the primary users of the MAEWR. The Air Force and the Air National Guard also have used the MAEWR. We found that the Air Force used the MAEWR approximately 17 hours in the first quarter of FY 1991.

However, according to MAEWR officials, the utilization rate would increase to over 60 percent if the Air Force used the MAEWR more in the future.

Strategic Air Command Electronic Warfare Training Assets. The SAC conducts EW training at its Strategic Training Route Complex (STRC). The STRC is a 500 by 500 nautical mile area in the Northwest United States that consists of 12 permanent and 4 mobile sites that are operated by approximately 800 personnel. The STRC's mission is to support and enhance aircrew readiness by operating and maintaining electronic equipment and facilities that provide realistic threat environments and prompt feedback on aircrew/aircraft performance. The STRC uses EW systems, including the Mutes and Mini-Mutes Systems, to conduct EW training. These EW systems can simulate over 92 different threat signals representing antiaircraft artillery, surface-to-air missiles, and search and acquisition radars. According to SAC officials, the STRC will have 34 EW threat emitter systems by FY 1995. However, the Air Force has merged the SAC, the TAC, and the Military Airlift Command (MAC) into two new commands: the Air Combat Command and the Air Mobility Command. The Air Force also plans to form composite wings at various Air Force Bases. We believe the Air Force should review and realign the location of those assets so all U.S. aircrews can realize their training potential. These mergers and moves could provide the perfect opportunity to realign assets.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSES

1. We recommend that the Commander, Air Combat Command, Department of the Air Force, direct training officials at Command Headquarters to use the Navy's Mid-Atlantic Electronic Warfare Range to offset the shortfall in realistic electronic combat/electronic warfare training on the east coast.

Management Comments. The Assistant Secretary of the Navy for Manpower and Reserves Affairs partially concurred with the recommendation stating that the Navy is amenable to letting the Air Force use the MAEWR providing consideration is given to environmental and community effects. Also, the Assistant Secretary wants to assure that the increased activity does not adversely impact the state of North Carolina or reduce Navy or Marine Corps training.

Audit Response. Based on the Air Force response below, it appears that the Navy and Air Force have worked out an agreement which allows the Air Force to use the MAEWR.

Management Comments. The Air Force's Chief, Electronic Combat Division, Operations Directorate, Office of the Chief of Staff for Plans and Operations, indicated concurrence with the

recommendation. He stated that an agreement reached with the Navy after the draft report was issued, allows the Air Force to use the range 6 times a week.

Audit Response. We consider the management comments to be responsive. Using the MAEWR for scheduled training periods should offset training shortfalls on the east coast.

2. We recommend that the Air Force Chief of Staff review the present location of all training electronic warfare simulators and realign such assets to ensure that all aircrews receive adequate electronic warfare training.

Management Comments. The Air Force's Chief, Electronic Combat Division, Operations Directorate, Office of the Chief of Staff for Plans and Operations, indicated concurrence with the recommendation. He stated that the Air Force continuously reviews operational locations of threat simulators to optimize training. Also, he stated that future goals include fielding a second Electronic Warfare Aggressor Squadron and assets to expand the scope of training.

Audit Response. We commend the Air Force for taking actions to enhance and expand aircrew training. However, the Air Force did not adequately respond to our recommendation because there was no mention of when the EW assets were reviewed and which, if any, were realigned. Therefore, we request the Commander, Air Combat Command, to inform us when the review of the assets will take place and the outcome of any realignments.

STATUS OF RECOMMENDATIONS

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

B. **TRAINING SIMULATORS**

The Military Departments were developing separate EW threat simulator programs for training at the risk of promoting unnecessary duplication. They did not implement the internal controls necessary to ensure that EW threat simulator requirements were properly reviewed and coordinated before development, acquisition, or upgrade. As a result, the Military Departments have programmed over $194 million to develop four simulator systems that duplicate the same advanced threat signals.

DISCUSSION OF DETAILS

Background

The Under Secretary of Defense for Acquisition provides overall policy for development and acquisition of EW threat simulators. The Deputy Director, Defense Research and Engineering (Test and Evaluation) (DDDRE[T&E]), ensures that EW threat simulator acquisitions meet developmental and operational test and evaluation requirements, including validation. The DDDRE(T&E) exercises DoD management authority over simulator programs through his chairmanship of the EXCOM.

The mission of the EXCOM is to provide management, policy, guidance, and program approval for all DoD simulator projects. The EXCOM uses a CROSSBOW-S Committee to fulfill its mission and to ensure the availability and adequacy of simulators representing the threat and also prevent unnecessary duplication in threat simulator development and acquisition. "Threat Simulator Program Guidelines" (the Guidelines), September 1991, requires the Military Departments to identify their simulator requirements to EXCOM for approval. The Guidelines help prevent unnecessary duplication; for example, if more than one Military Department indicates a requirement for the same simulator, a lead Service will be appointed to prepare and execute acquisition plans.

Scope of Review. We identified seven EW threat simulator programs for training (Appendix A). We reviewed program cost, types of threat signals replicated, and management actions to ensure that such programs were not being duplicated among the Military Departments.

Management and Control of Threat Simulator Programs. During our review, we visited EW threat simulator project offices for each Military Department and reviewed the acquisition plans for the advanced training simulators.

Each project office was managing and controlling its training EW threat simulator program without coordinating with the CROSSBOW-S Committee. The Army was developing the Aircraft Survivability Equipment Trainer IV (ASET IV); the Navy was developing the Threat Radar Emitter System (TRES); and the Air Force was developing the Advanced Tactical Threat Emitter System (ATTES) and Mobile Advanced Threat System (MATS). Also, the Military Departments did not submit their acquisition plans to the CROSSBOW-S Committee for review and coordination, as required.

Duplication of Advanced Threat Signals

In evaluating the ASET IV, TRES, ATTES, and MATS acquisition plans, we found duplication among the Military Departments. Developmental costs are being paid for in each of the four systems being developed for the same threat signals (except for two signals contained on the ASET IV and MATS). However, we could not determine the costs associated with the duplication of various threat signals because the procurements were in the precontract stage, and developmental costs had not been determined. We attribute this duplicative developmental cost to the Military Departments' managing and controlling their separate programs for advanced threat signals without the CROSSBOW-S Committee review and coordination. The following chart illustrates that threat signals are being duplicated.

THREAT SIGNALS DUPLICATED*

	ASET IV	TRES	ATTES	MATS
Threat 1	X	X	X	X
Threat 2		X	X	
Threat 3		X	X	X
Threat 4			X	
Threat 5	X			
Threat 6	X			
Threat 7	X			X
Threat 8				X

* Identification of specific threats is classified information. A person with the proper clearance may request the information.

Even though the EW threat simulators differed in appearance and other characteristics, their designs contained the same threat signals. The Military Departments were each paying to develop the same advanced threat signal. Of $194 million in total program cost, we believe that duplicative development cost could be avoided if one Military Department designed and developed the signals in the EW threat simulators and shared them with the other Military Departments.

Internal Controls

The Military Departments lacked adequate internal controls to ensure that advanced training EW threat simulator requirements were properly reviewed and coordinated before the EW threat simulator was developed, acquired, or upgraded. The Military Departments did not submit any of their acquisition plans for advanced threat signals to the CROSSBOW-S Committee for review and coordination. Air Force officials for two programs were either unaware of, or did not follow, the Guidelines stating that the CROSSBOW-S Committee was supposed to review and coordinate their acquisition plans before development or acquisition. One program official believed that the only CROSSBOW-S Committee reviews were at design validation specification review and at initial operational capability. If the Military Departments' requirements had been submitted to CROSSBOW-S Committee for review, duplicative development cost for the same threat signals could have been avoided.

Consolidation of Funding

The DoD needs to ensure that the Military Departments follow the policies and procedures provided in the Guidelines. The DoD can ensure that the Guidelines are followed by consolidating EW threat simulator funding and revising the Guidelines. The Guidelines states, in part, that the Military Departments shall notify the CROSSBOW-S Committee of their priorities for new air defense or air defense-related threat simulator development or acquisition. The CROSSBOW-S Committee shall coordinate the Military Departments' needs and recommend to the EXCOM a lead Military Department for EW threat simulator development or acquisition. The Guidelines should be revised to state that the Military Departments shall obtain CROSSBOW-S Committee approval of threat development, acquisition, or upgrade before the program funding is approved.

Threat Simulator Consolidation Study

GAO Report No. GAO/NSIAD 88-93 (OSD Case No. 7414), "Multiple Developments of Costly Threat Simulators," 1988, recommended central management of the Threat Simulator Program. As a result of the GAO audit, OSD issued DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures."

DoDIG Report No. 90-089 recommended consolidating management and funding of the Threat Simulator Program (Appendix B). Implementation of recommendations described in the report was agreed to and then postponed in October 1990 because the Deputy Secretary of Defense directed the DDDRE(T&E) to reconcile multiple approaches to the development of threat simulators. In responding to the Deputy Secretary of Defense's tasking, the DDDRE(T&E) established the Threat Simulator Study Group

(the Study Group). Overall, the Study Group concluded that consolidation of funding would not improve organizational shortcomings but would provide OSD with a control mechanism and would create a target for possible congressional reductions. The Study Group also provided several recommendations that, in its opinion, improved coordination of EW threat simulator policies and procedures. We believe that while the Study Group has complied with the intent of the tasking, its conclusions and recommendations do not provide for corrective action. Rather, they only provide another layer of review and reemphasize the established policies and procedures concerning the Threat Simulator Program.

Cost Savings Available

Opportunities for savings could be lost if the CROSSBOW-S Committee does not promptly review the ASET IV, TRES, ATTES, and MATS acquisition plans for advanced threats. All the planned EW threat simulator acquisitions are in the precontract stages. Therefore, the apparent duplications can be reviewed and resolved by the CROSSBOW-S Committee before development or acquisition. Moreover, the CROSSBOW-S Committee's review could prevent the Military Departments from having to pay several contractors to develop threats signals for the same advanced threats.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSES

1. We recommend that the Comptroller of the Department of Defense consolidate all funding (to include research, development, test, and evaluation and procurement) for development, acquisition, upgrade, modification, and validation of air defense and air defense-related threat simulators used for testing and training into an OSD program element under the control of the Director, Test and Evaluation, Office of the Under Secretary of Defense for Acquisition.

2. We recommend that Director, Test and Evaluation, Office of the Under Secretary of Defense for Acquisition, with support from the Comptroller of the Department of Defense, establish internal controls that:

   a. Require the Services get written concept approval from the Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union Committee for test and training electronic warfare threat simulator projects with a value of $1 million or more in a single year or a project total value of $5 million or more before requested projects and funding are entered into the Program Objective Memorandum or budget.

b. Require Service projects with a value of $1 million or more in a single year or a project total value of $5 million or more be reviewed by the Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union Committee and approved in writing by the Executive Committee on Threat Simulators before any funds may be obligated or expended against the project.

Management Comments. The Director, Test and Evaluation, Office of the Under Secretary of Defense for Acquisition, concurred with the recommendation's intent. He stated that the recommendation should be restructured to read that the Comptroller, DoD, consolidate all funding into an OSD program element under the control of the Director, Test and Evaluation. Also, he felt that a second recommendation stating that the Director, Test and Evaluation, with support from the Comptroller, DoD, establish further program internal controls.

Audit Response. We considered the management comments and agree with the suggestion made by the Director, Test and Evaluation, to restructure Recommendation 1. and direct it to the Comptroller, DoD. While this new recommendation was coordinated with and agreed to by the Comptroller's staff, no opportunity to respond formally has been available. We also have added Recommendations 2.a. and 2.b., as suggested by the Director. We have renumbered the original Recommendation 2. as Recommendation 3. We request the Director, Test and Evaluation, provide written comments to this final report within 60 days, that tells us of how the recommendations will be implemented and the completion dates.

Management Comments. The Army's Director, Test and Evaluation Management Agency, stated that consolidated funding was previously studied, and the study concluded that consolidated funding was not necessary or desirable. In addition, the Assistant Secretary of the Navy (Manpower and Reserve Affairs) stated that consolidation of funding was previously studied and concluded that a large simulator development budget line will be subject to increased congressional budget actions resulting in diminished development capability. Further she stated that consolidation of EW procurement funding is not appropriate because of the significant differences in service requirements. Also, the Air Force's Chief, Electronic Combat Division, Operations Directorate, Office of the Deputy Chief of Staff for Plans and Operations, stated that the Services did not agree with consolidated funding in FY 1989 and still believes that OSD has sufficient controls in place without resorting to consolidated funding.

Audit Response. We have reviewed the management comments from the Army, Navy, and the Air Force. We disagree with the Army, Navy, and Air Force comments on consolidated funding. We still believe, as does the Director, Test and Evaluation, and the Comptroller, DoD, that consolidation of EW threat simulator program funding is necessary to eliminate unwarranted duplication. Such consolidation, used as an internal control mechanism, will ensure that the Military Departments' EW threat simulator program requirements are properly and promptly reviewed by the CROSSBOW-S Committee before funding approval.

3. We recommend that the Chairman, Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union Committee, schedule a review of the Military Departments' acquisition plans for advance threats on the Aircraft Survivability Equipment Trainer IV, Threat Radar Emitter System, Advanced Tactical Threat Emitter System, and Mobile Advanced Threat System to prevent unnecessary duplication.

Management Comments. As of June 25, 1992, we had not received management comments from the Chairman, CROSSBOW-S Committee.

Audit Response. We request the Chairman, CROSSBOW-S Committee, provide written comments to Recommendation 3. in response to the final report within 60 days.

Management Comments. The Director, Test and Evaluation, concurred with the intent of the recommendation. The Army's Director, Test and Evaluation Management Agency, stated that Finding B was factually wrong by stating that ASET IV was not fully coordinated with and reviewed by the Air Force and Navy through the CROSSBOW-S Committee. Also, the Army stated that the audit finding that the ASET IV acquisition plan was not submitted to the CROSSBOW-S Committee for review and coordination is factually wrong.

The Air Force's Chief, Electronic Combat Division, Director of Operations, Deputy Chief of Staff, Plans and Operations, stated that the CROSSBOW-S Committee already had full knowledge of the Service's plans to upgrade existing threat simulators, including the Air Force plans to develop and acquire threat simulators. Also, he stated it was incorrect that the Services did not submit their acquisition plan to CROSSBOW-S. Due to funding restraints, the ATTES program was canceled during our audit timeframe.

Audit Response. After carefully considering all management comments, we still maintain that Finding B is accurate as stated in the draft report. We agree with the Army that a comparative analysis of ASET IV and TRES was documented in the CROSSBOW-S Committee proceedings of May 4, 1989. Subsequently, the EXCOM approved the systems to proceed with separate developments.

We also agree with the Air Force's statement that the CROSSBOW-S Committee was briefed on the ATTES program requirements. However, we feel this does not constitute a detailed review of the acquisition plan in the requirement stage. The Guidelines' intent is to ensure that Military Department acquisition plans are reviewed by the CROSSBOW-S Committee and approved by the EXCOM during the requirements planning stage. This procedure allows the EXCOM to appoint a lead Service for EW threat simulator development, acquisition, or upgrade, and helps avoid unnecessary duplicative development cost. The appointed lead Service can then execute a Memorandum of Understanding with the other Services to procure the EW threat simulator systems, such as the advanced threat signals. However, this was not the case with the comparative analysis of the ASET IV and TRES systems because timing was critically related to approval of the systems.

At the time of the comparative analysis, the ASET IV contract was ready for signature and the TRES was already under contract. The briefing to the CROSSBOW-S Committee on the ATTES program did not meet the Guidelines' intent. We feel the Guidelines' intent was circumvented since the CROSSBOW-S Committee did not receive the ASET IV or ATTES acquisition plan in the requirement planning stage.

We have confirmed with the CROSSBOW-S Committee that the decision to proceed with the two separate procurements was based on the timing of the comparative analysis and the CROSSBOW-S Committee did not review acquisition plans for any of the four systems discussed in the report. Also, none of the systems had completed a design specification review before the contract award for EW threat simulator acquisition, development, or upgrade.

Furthermore, the Director, Test and Evaluation, concurred with the recommendation as suggested for Finding B, agreeing to have the CROSSBOW-S Committee schedule a review of the Services' acquisition plans related to advanced threat signals to avoid any unnecessary duplication. This further proves that the comparative analysis did not constitute a detailed review of the Military Departments' acquisition plans. So, we disagree with the Army's comments on the factual content of this report. We realize that the ATTES program was canceled during our review; however, this program should be reviewed by the CROSSBOW-S Committee if it is funded again and resubmitted.

4. We recommend that the Director, Test and Evaluation, Office of the Under Secretary of Defense for Acquisition, revise the Department of Defense "Threat Simulator Program Guidelines," Threat Simulator Program Plan and Procedures, and the Construction of a Radar to Operationally Simulate Signals Believed to Originate in the Soviet Union Committee and the

Executive Committee on Threat Simulators Charters to reflect the intent of Recommendations B.1., B.2., and B.3. in this final report.

Management Comments. The Director, Test and Evaluation, concurred with the intent of the recommendation and suggested restructuring and renumbering Recommendation 3. to Recommendation 4.

Audit Response. We restructured and renumbered the original Recommendation 3. as Recommendation 4. in the final report. We request that the Director, Test and Evaluation, provide written comments to the revised recommendation in the final report within 60 days and advise us when the Guidelines will be changed.

Management Comments. The Assistant Secretary of the Navy for Manpower and Reserve Affairs and the Air Force's Chief, Electronic Combat Division, Operations Directorate, Office of the Deputy Chief of Staff for Plans and Operations, stated the CROSSBOW-S Committee Charter already requires EXCOM approval before starting a new EW threat simulator program.

Audit Response. We have reviewed the Navy and the Air Staff comments and agree that an EXCOM review of the programs is already required. To clarify the recommendation, we have reworded it to read that written approval should be obtained from EXCOM as an additional internal control to avoid unnecessary duplication and asked the Director, Test and Evaluation to respond to the final report stating when the guidelines will be changed.

STATUS OF RECOMMENDATIONS

Number	Addressee	Response Should Cover: Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues*
1.	USD(A), Director, Test and Evaluation		X	X	IC
2.	USD(A), Director, Test and Evaluation		X	X	IC
3.	Chairman, CROSSBOW-S Committee	X	X	X	IC
4.	USD(A), Director, Test and Evaluation		X	X	

* IC = material internal control

C. FIRE-SUPPRESSION CONTRACT AT THE DARE COUNTY BOMBING RANGE

The Air Force contract with the North Carolina Forestry Service for fire suppression at the Dare County Bombing Range was not cost-effective. This condition occurred because the Air Force had not conducted a cost-benefit analysis to determine the most cost-effective manner of fire suppression for the Dare County Bombing Range. As a result, approximately $1 million each year is being expended for fire suppression at the Dare County Bombing Range, even though less costly alternatives exist.

DISCUSSION OF DETAILS

Background

The Air Force first proposed establishing a bombing range on leased land in Dare County, North Carolina, in 1961. The proposal immediately met with opposition because of the possibility of forest fires being started by bombs on the range. In 1964, the Navy, Air Force, and State of North Carolina agreed that the Military Departments would provide fire-protection equipment for the range during bombing sorties. Later that year, the Air Force leased privately owned land in the North Carolina counties of Dare and Hyde to establish the Dare County Bombing Range.

The Dare County Bombing Range is 175 miles from the Seymour Johnson Air Force Base and is used for conventional aircrew training, including laser-guided bombing, skip bombing, strafing, simulated nuclear bomb drops, and conventional dive bombing. The Dare County Bombing Range is located on 46,604 acres of swamp land, surrounded by canals and marsh. The Dare County Bombing Range consists of a Government-owned, contractor-operated, Air Force facility and a Government-owned, Government-operated, Navy facility. The Air Force range is used by the Seymour Johnson, Myrtle Beach, Shaw, and Langley Air Force Bases, and five Air National Guard units. The Navy range is used by Navy organizations from Norfolk, Virginia, and Cherry Point, North Carolina.

In 1964, the Air Force awarded a fire-suppression contract for the Dare County Bombing Range to the State of North Carolina. In early 1978, the Government purchased the previously leased Bombing Range outright and was not obligated to use the State of North Carolina contract. However, the Air Force did not then discontinue the fire-suppression contract or pursue alternative methods of fire-suppression. Instead, it has continued to award the contract every year since the land purchase. Because of the lack of documentation available at the time of our audit, we could not determine what the total cost of the contract has been since 1978, but it has cost over $4.4 million since 1986.

Contract Cost

The FY 1990 contract costs exceeded $988,000 and included road and bridge maintenance, vehicle repair, controlled burns, and other fire-prevention tasks. The contract also required that two helicopters be placed on standby during the high-risk fire season (75 days each year). That option cost the Air Force over $143,000. In addition, the Government owns all of the equipment used by the North Carolina Forestry Service on the Dare County Bombing Range, except for six trucks.

Cost Comparison Study

In November 1990, the Air Force reviewed the fire-suppression contract and concluded that contract costs were unreasonable and that performing the fire-suppression mission in-house was feasible. Based on this review, the Commander of the Seymour Johnson Air Force Base requested that TAC conduct a Cost Comparison Study of the fire-suppression workload and convert to an in-house operation if it was more cost-effective. However, TAC (now the Air Combat Command) did not perform a Cost Comparison Study because of a management determination that it was not then in the Air Force's best interest.

Other Alternatives

Although the Air Force did not perform a Cost Comparison Study, it had done preliminary studies that identified alternatives that could be more cost-effective. These alternatives included transferring the function in-house and using Air Force personnel and negotiating a modification to the operation and maintenance contract and allowing the contractor personnel to perform the fire-suppression tasks. The Department of Interior, U.S. Fish and Wildlife Service, also has expressed an interest in obtaining the fire suppression contract that, according to Department of Interior officials, could be done cheaper than the current cost.

The Air Force, however, renewed the contract with the State of North Carolina on October 1, 1991, at a cost of approximately $800,000. We believe that the Air Force should perform the Cost Comparison Study, determine the most cost-effective means of fire suppression for the Dare County Bombing Range, and employ the most economical method.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Commander, Air Combat Command, Department of the Air Force:

1. Direct the Commander, Seymour Johnson Air Force Base, to conduct a Cost Comparison Study to determine the most cost-effective alternative to providing fire suppression to the Dare County Bombing Range.

2. Take the necessary action to pursue the most cost-effective alternate fire-suppression method for the Dare County Bombing Range.

Management Comments. The Air Force's Chief, Electronic Combat Division, Operations Directorate, Office of the Deputy Chief of Staff for Plans and Operations, agreed that the fire-suppression contract was not cost-effective. He stated that it requires further analysis and the Air Force has been "working this issue." He also commented that the contract for FY 1992 and FY 1993 was reduced in cost by $200,000. He felt that as a result of these actions, the final report should not contain this recommendation.

Audit Response. We consider the management comments to be only partially responsive. The Air Force did not give any details of how they are "working this issue," nor did they state that they would perform a Cost Comparison Study and select the most cost-effective alternative as we recommended. The $200,000 contract-price reduction recognized in our draft report does not release the Air Force of its responsibility to determine the most cost-effective method of fire-suppression. Therefore, we request that Commander, Air Combat Command, respond to the final report and tell us what actions are planned and what the completion date(s) for such actions will be.

STATUS OF RECOMMENDATIONS

		Response Should Cover:			
Number	Addressee	Concur/ Nonconcur	Proposed Action	Completion Date	Related Issues
2.	Commander, Air Combat Command		X	X	

PART III - ADDITIONAL INFORMATION

Appendix A - Electronic Warfare Threat Simulator Systems Reviewed

Appendix B - Prior Audits and Other Reviews

Appendix C - Summary of Potential Benefits Resulting from Audit

Appendix D - Activities Visited or Contacted

Appendix E - Report Distribution

APPENDIX A - ELECTRONIC WARFARE THREAT SIMULATOR SYSTEMS REVIEWED

Aircraft Survivability Equipment Trainer IV (ASET IV). This Army system's mobile configuration consists of five different system types: a command/control vehicle, an antiartillery system, an infrared surface-to-air missile system, a radio frequency surface-to-air system, and a hand-carried portable air defense system. The system replicates up to four advanced signal types.

Threat Radar Emitter System (TRES). This Navy system can replicate a variety of antiartillery radar, surface-to-air radar, and radar-jamming threat signal types. The TRES is a pedestal-mounted, transportable system that replicates up to 18 threat signal types.

Advanced Tactical Threat Emitter System (ATTES). This Air Force system is a planned upgrade for the Mini-Mutes system. It consists of an REU that provides advanced threat signals to the Mini-Mutes configuration. Each REU replicates up to four threat signal types.

Mini-Mutes. This Air Force system consists of a Master Control Group (MCG) and one to five Remote Emitter Units (REUs). The MCG is manned by a single operator who monitors the status of the REUs. The REUs can be located thousands of miles away from the MCG and communicate through ordinary telephone systems or other communications links. Each REU replicates up to 80 threat signal types.

Mobile Advanced Threat System (MATS). This Air Force system is the same configuration as ASET IV except it has two different threat signals. The MATS also replicates up to four advanced threat signals.

Multiple Threat Emitter System (MUTES). This Air Force system can replicate surface-to-air tracking and acquisition radar, early warning radar, height-finding radar, ground control intercept radar, and antiartillery radar. The MUTES replicates up to 120 threat signal types.

Unmanned Threat Emitter (UMTE). This Air Force system is a remotely controlled, unmanned emitter for use on ranges. The UMTE replicates various antiartillery radar and surface-to-air systems. The UMTE replicates up to four threat signal types. The Air Force plans to terminate the UMTE program after procuring nine systems. However, the Air Force does not have a contract termination date.

APPENDIX B - PRIOR AUDITS AND OTHER REVIEWS

General Accounting Office (GAO) Report No. GAO/NSIAD-88-93 (OSD Case No. 7424), "Electronic Warfare, Multiple Developments of Costly Threat Simulators," February 1, 1988, focused on armed forces replications of the Commonwealth of Independent States air defense weapon systems, including surface-to-air missiles and guns. The GAO found that the Military Departments were paying to develop threat simulators more than once, threat simulators misrepresented threat systems, faulty threat simulators could distort test results of major systems and training effectiveness, and the absence of effective internal controls contributed to faulty threat simulators.

The GAO recommended that the Secretary of Defense ensure that EXCOM and CROSSBOW-S centrally manage threat simulator programs; require the Military Departments to segregate responsibilities for development, test, and acceptance of threat simulators as valid representations of the threat; and assign responsibility for monitoring the quality and adequacy of threat simulators to the appropriate DoD Component. These recommendations were implemented in the CROSSBOW-S Committee and EXCOM Charters in December 1987 and in DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," in April 1989.

Department of Defense Inspector General (DoDIG) Report No. 90-089, "Audit of the DoD Management of Threat Simulators," June 27, 1990. The audit objectives were to determine the effectiveness of DoD's management of threat simulators and to evaluate internal controls limiting the proliferation of threat simulators. The audit showed that Threat Simulator Program control was inadequate and that the Military Departments were not fully committed to tri-Service threat simulator development and acquisition.

The DoDIG recommended that the Deputy Director, Defense Research and Engineering (Test and Evaluation), charter a Joint Threat Simulator Program Office; provide centralized control of threat simulator funds; provide review and oversight of all threat simulator requirements, developments, acquisitions, and upgrades; and ensure that each Military Department be adequately represented in the Joint Threat Simulator Program Office. Implementation of recommendations was postponed by an action directed by the Deputy Secretary of Defense.

APPENDIX C - SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Type of Benefit
A.1. A.2.	Economy and Efficiency. Will ensure that the Air Force is using resources effectively and economically.	Nonmonetary.
B.1. B.2.	Economy and Efficiency. Will provide OSD oversight to ensure that resources are used effectively and economically.	Nonmonetary.
B.3. B.4.	Economy and Efficiency. Will help review and coordination decisionmakers monitor tri-Service threat simulator requirements.	Undeterminable funds put to better use.
C.1.	Economy and Efficiency. Will avoid expending resources for services that the Government can provide more cost-effectively.	Nonmonetary.
C.2.	Economy and Efficiency. Will avoid expending resources for services that the Government can provide more cost-effectively.	Undeterminable funds put to better use.

APPENDIX D - ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Deputy Director, Defense Research and Engineering
(Test and Evaluation), Washington, DC

Department of the Army

Headquarters, U.S. Army (HQCDA/DAMO-FDT) Washington, DC
Army Intelligence Agency, Washington, DC
Army Missile and Space Intelligence Center, Huntsville, AL
Operational Test and Evaluation Command, Alexandria, VA
Army Materiel Command, Washington, DC
Training and Doctrine Command, Ft. Monroe, VA
Army Training Center, Ft. Eustis, VA
Aberdeen Proving Ground, Aberdeen, MD

Department of the Navy

Naval Air Systems Command, Washington, DC
Naval Research Laboratory, Washington, DC
Fleet Electronic Warfare Support Group, Norfolk, VA
Fallon Naval Air Station, Reno, NV
Navy Training Center, Orlando, FL
Commander in Chief, Atlantic Fleet, Norfolk, VA
Oceana Naval Air Station, Norfolk, VA

Department of the Air Force

Tactical Division, Directorate of Operations (AF/XOOTT),
Washington, DC
Headquarters, Tactical Air Command, Langley AFB, VA
Headquarters, Strategic Air Command, Offutt AFB, NE
1st Electronic Combat Range Group, Barksdale AFB, LA
363rd Tactical Fighter Wing, Shaw AFB, SC
Tactical Air Warfare Center, Eglin AFB, FL
Tactical Fighter Weapons Center, Nellis AFB, NV
Strategic Warfare Center, Ellsworth AFB, SD
366th Tactical Fighter Wing, Mountain Home AFB, ID
Headquarters, Warner Robins Air Logistics Center,
Warner Robins AFB, GA
Sacramento Air Logistics Center, Sacramento, CA
4th Tactical Fighter Wing, Seymour Johnson AFB, NC
Saylor Creek Training Range, Saylor Creek, ID
Strategic Training Range Complex, Belle Fouche, WY

APPENDIX D - ACTIVITIES VISITED OR CONTACTED (Continued)

Marine Corps

Marine Corps Air Station, Cherry Point, NC
Mid-Atlantic Electronic Warfare Range, Cherry Point, NC

Non-Government Activities

PM-Training Devices, Orlando, FL
AAI Corporation, Hunt Valley, MD

APPENDIX E - REPORT DISTRIBUTION

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition
Director, Defense Research and Engineering
Deputy Director, Defense Research and Engineering
(Test and Evaluation)

Department of the Army

Secretary of the Army
The Inspector General
U.S. Army Missile and Space Intelligence Center

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Commander, Naval Air Systems Command
Tactical Training Ranges Program Office,
Naval Air Systems Command
Commander, Naval Sea Systems Command
Commander, Navy Training Center
Commander in Chief, Atlantic Fleet

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management
and Comptroller)
Commander, Strategic Air Command
Commander, Tactical Air Command

Non-DoD Federal Organizations

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

APPENDIX E - REPORT DISTRIBUTION (Continued)

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

PART IV - MANAGEMENT COMMENTS

Office of the Under Secretary of Defense Comments

Department of the Army Comments

Department of the Navy Comments

Department of the Air Force Comments

Office of the Under Secretary of Defense Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3000

ACQUISITION

MAY 7 1992

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE
(ATTN: MR. DONALD E. REED, DIRECTOR,
ACQUISITION MANAGEMENT)

SUBJECT: Draft Report on the DoD Management of Electronic Warfare Threat Simulators for Training (Project No. 1AB-0032)

Attached are my comments on the subject report. The comments on the recommendations for corrective action, pages two and three of the attached comments, were coordinated with your staff and the Office of the Comptroller, Department of Defense, in a meeting on 20 April 1992.

Please convey my appreciation to the audit staff for their constructive audit report.

J.V. Bolino, for
Charles E. Adolph
Director
Test and Evaluation

Attachment

Final Report Reference

DIRECTOR, TEST AND EVALUATION
UNDER SECRETARY OF DEFENSE (ACQUISITION)

COMMENTS ON

DoD IG, DRAFT AUDIT REPORT ON DoD MANAGEMENT OF ELECTRONIC WARFARE THREAT SIMULATORS FOR TRAINING
(PROJECT NO. 1AB-0032)

Comments provided in the following paragraphs are keyed to the Report Findings B (page 13), Recommendations for Corrective Action B.1.,B.2.,and B.3. (page 20), monetary benefits associated with Recommendations B.1., and B.2. (page 20), and material internal control weaknesses highlighted in Part 1 of the Draft Report.

REPORT FINDING B. (page 13):

9, Para. 1

"B. TRAINING SIMULATORS. The Military Departments were developing separate threat simulator programs for training at the risk of promoting unnecessary duplication because they did not implement the internal controls necessary to ensure that their threat simulator requirements were properly reviewed and coordinated before development, acquisition, or upgrade. As a result, the Military Departments have programmed over $194 million to develop four systems that include replications of the same advanced threat signals."

COMMENT:

Partially concur in Finding B. Our review of funding programmed for the four projects (Army Aircraft Survivability Equipment Trainer (ASET IV), Navy Threat Radar Emitter System (TRES), Air Force Advanced Tactical Threat Emitter System (ATTES), and Air Force Mobile Advanced Training System (MATS)) is somewhat less than the $194 million cited in the Draft Report. This is probably due to our not knowing the source and date of the funds cited in the Draft Report. Two of the projects, the ASET IV and TRES, along with the Air Force Unmanned Threat Emitter (UMTE), were subjected to a comparative analysis in 1989 to determine if unnecessary duplication existed. It was concluded that there was no unnecessary duplication among the three developments. The comparative analysis was briefed to and the separate developments were recommended to proceed by the CROSSBOW-S Committee on May 4, 1989, and approved by the EXCOM on June 13, 1989. The ASET IV and TRES projects have been under development for some time. The ASET IV prototype is scheduled for delivery fourth quarter FY 1992. TRES equipment deliveries, consisting of 30 units, began in March 1992 and are scheduled to be completed in 1996. The Air Force ATTES project has been

Attachment

Final Report Reference

briefed to the CROSSBOW-S Committee on several occasions; however, the Air Force has not submitted its acquisition plan to the Committee for formal review. The ATTES project, subsequent to the conduct of the DoD IG Audit, has been placed on hold by the Air Force due to a lack of funding. There are no funds currently programmed for the ATTES. Funding for the Air Force MATS project ($4.7 million in FY 94) is assumed to be a programming wedge. The project has not been submitted to the CROSSBOW-S Committee for review. If and when the Air Force decides to pursue the ATTES and MATS projects we will ensure that they are reviewed by the appropriate Committees before approval to proceed is granted.

RECOMMENDATIONS FOR CORRECTIVE ACTION (page 20):

"B.1. We recommend that the Director, Defense Research and Engineering, consolidate funding for the Threat Simulator Program.

B.2. We recommend that the Chairman of the Construction of a Radar to Operationally Simulate Signals Believed to Originate Within the Soviet Union Committee schedule a review of the Military Departments' acquisition plans for advanced threats on the Aircraft Survivability Equipment Trainer IV, Threat Radar Emitter System, Advanced Tactical Threat Emitter System, and Mobile Advanced Threat System to prevent unnecessary duplication.

B.3. We recommend that the Director, Defense Research and Engineering, update Threat Simulator Program Guidelines to include the statement, "The Military Departments shall obtain CROSSBOW-S approval of threat simulator development, acquisition, or upgrade before program funding approval."

COMMENT:

Concur with the intent of the Recommendations (page 20) in the Report; however, recommend that they be restructured as follows:

12, Para. 3

DoD IG Recommendation B.1. restructured as follows:
1. We recommend that the OSD Comptroller consolidate all funding (RDTE and Procurement) for development, acquisition, upgrade, modification, and validation of air defense and air defense related threat simulators used for testing and training into an OSD program element under the control of the Director, Test and Evaluation.

12, Para. 4

New Recommendation 2 added as follows; DoD IG Recommendation 2 renumbered as 3:
2. We recommend that the Director, Test and Evaluation with support from the OSD Comptroller establish program internal controls that:

Attachment

Final Report Reference	
12, Para. 4	(a). Require the Services to obtain concept approval in writing from the CROSSBOW-S Committee, for test and training simulator projects with a value of one million or more in a single year or a project total value of five million or more, before requested projects and funding are entered into the POM or budget.
13, Para. 1	(b). Require Service projects with a value of one million or more in a single year or a project total value of five million or more be reviewed by the CROSSBOW-S Committee and approved in writing by the EXCOM before any funds may be obligated or expended against the project.
14, Para. 2	**DoD IG Recommendation 2 unchanged and renumbered as Recommendation 3 as follows:** 3. We recommend that the Chairman of the CROSSBOW-S Committee schedule a review of the Military Departments' acquisition plans for advanced threats on the Aircraft Survivability Equipment Trainer IV, Threat Radar Emitter System, Advanced Tactical Threat Emitter System, and Mobile Advanced Threat System to prevent unnecessary duplication.
15, Para. 5	**DoD IG Recommendation 3 restructured and renumbered as Recommendation 4 as follows:** 4. We recommend that the Director, Test and Evaluation revise the DoD Threat Simulator Guidelines, DoD Threat Simulator Program Plan Policy and Procedures, and the CROSSBOW-S Committee and EXCOM Charters to reflect intent of Recommendations 1,2 and 3 above.
	MONETARY BENEFITS ASSOCIATED WITH RECOMMENDATIONS B.1., AND B.2. (page 20):
ii, Para. 1	**Reference March 12, 1992 Draft Report transmittal Memorandum.** "We could not quantify the monetary benefits related to Recommendations B.1., B.2., C.1., and C.2.. We ask that you comment on whether there are monetary benefits associated with these Recommendations and provide an estimate of the amount of the benefits."
	COMMENT:
	There are no monetary benefits associated with Recommendations B.1. and B.2.. The CROSSBOW-S Committee and the EXCOM agreed in 1989 that unnecessary duplication did not exist in the ASET IV and TRES projects and they were approved for development. The ATTES project is on hold with no funds programmed. The MATS project has a one year funding wedge programmed in FY 94 but the project has not been defined. If one or both of the projects are recommended by the Services to proceed, the CROSSBOW-S Committee and EXCOM will review the projects against other appropriate ongoing training simulator

Final Report Reference

projects to determine if unnecessary duplication exists, and determine if monetary savings could be gained.

1, Para. 4

MATERIAL INTERNAL CONTROL WEAKNESSES HIGHLIGHTED IN PART I (page 3).

"Controls were not in place for reviewing and coordinating the Military Departments' acquisition plans for advanced threat simulators. Recommendations B.1. and B.2., if implemented, will correct these deficiencies."

COMMENT:

Concur. The DoD Threat Simulator Program Guidelines and The DoD Threat Simulator Program Policy and Procedures contain appropriate controls which if followed would prevent unnecessary duplication. We believe that the additional controls recommended in our new Recommendation 2 will provide positive corrective action.

Department of the Army Comments

Final Report Reference

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, DC 20310-0200

REPLY TO ATTENTION OF

12 MAY 1992

DACS-TE

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE, 400 ARMY NAVY DRIVE, ARLINGTON, VA 22202-2884

SUBJECT. Report on the Audit of DoD Management of Electronic Warfare Threat Simulators for Training (Project No. 1AB-0032, dated 12 Mar 92)

1. The following comments are provided reference Finding B of the subject report.

10, Para. 1

a. The finding that the Army is managing and controlling its training threat simulator program without coordinating with the other Military Departments is factually wrong The Aircraft Survivability Equipment Trainer IV (ASET IV) has been fully coordinated with and reviewed by the Air Force and Navy through the CROSSBOW-S Committee A record of this coordination and review is documented in the CROSSBOW-S proceedings of 4 May 1989 and EXCOM minutes of 13 Jun 1989.

11, Para. 1

b. The finding that the Army lacked adequate internal controls for review and coordination of advanced training threat simulators and did not submit plans to the CROSSBOW-S Committee for review and coordination is factually wrong. The ASET IV program has been fully reviewed and coordinated through the CROSSBOW-S Committee as evidenced by the record of proceedings referenced in paragraph (a) above.

10, Para. 2

c. Duplication of advance threat signals, in of itself, is not bad. The question of unwarranted duplication should be the issue. ASET IV has only two threats common to the Navy TRES system and one threat common to the Air Force UMTE system. After a thorough review, the CROSSBOW-S Committee approved development of ASET IV as designed, knowing that a certain degree of duplication would be necessary and warranted. Wherever possible, the Army has incorporated Air Force design and developments into the ASET IV program with a resulting estimated savings of over $14 million.

12, Para. 3

2. The Finding B recommendation to consolidate funding for threat simulators was previously studied as part of a joint Service threat simulator consolidation study in October 1991. The conclusion was that consolidated funding was not necessary or desirable. There is no new data in this report to support a renewal of that recommendation. This Audit report draws its conclusions and recommendations on factually inaccurate data. It should be reevaluated prior to publication in its final form.

DACS-TE
SUBJECT: Report on the Audit of DoD Management of Electronic Warfare Threat Simulators for Training (Project No 1AB-0032, dated 12 Mar 92)

3. POC is MAJ J. Rex Huling, DACS-TE, DSN 225-8995

John F. Gehring
Director, Test and Evaluation
Management Agency

Department of the Navy Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON D C 20350-1000

4 JUN 1992

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subj: DODIG DRAFT REPORT ON THE AUDIT OF THE DOD MANAGEMENT OF ELECTRONIC WARFARE THREAT SIMULATORS FOR TRAINING (PROJECT NO. 1AB-0032)

As you requested (Tab A), the Department of the Navy has reviewed the subject report. We partially concur with finding A recommendation 1 and finding B recommendation 2, and do not concur with finding B recommendations 1 and 3.

Specific comments (Tab B) on the findings and recommendations are forwarded for your consideration.

Barbara S Pope

BARBARA SPYRIDON POPE
Assistant Secretary of the Navy
(Manpower and Reserve Affairs)

TAB A - Your memo of 12 Mar 92
TAB B - DoN comments

Copy to:
NAVINSGEN
NAVCOMPT (NCB-53)

inal Report
eference

, Para. 1

DEPARTMENT OF THE NAVY RESPONSE
TO
DRAFT AUDIT ON THE DOD MANAGEMENT OF ELECTRONIC WARFARE
THREAT SIMULATORS FOR TRAINING
(PROJECT NO. 1AB-0032)

I. Finding A - ELECTRONIC WARFARE TRAINING ASSETS

A. Summary of the Finding:

The Air Force Tactical Air Command (TAC) does not have the EW simulator assets required to effectively train aircrews on the east coast. TAC was not using existing Navy training assets to offset this shortfall. This condition existed because the Navy and Air Force had not worked out scheduling problems at the Navy training range, and the Air Force had not efficiently managed its' EW threat simulator assets. As a result, opportunities for the Air Force to maintain or increase EW readiness of east coast TAC aircrews was reduced while the Navy's EW range complex on the east coast was under utilized.

B. Recommendation on the Finding:

Partially concur. The DoN is amenable, in principle, to accommodating Air Force training at the Mid-Atlantic Electronic Warfare Range (MAEWR), Beaufort or Oceana TACTS facilities provided:

- Careful consideration is given to the potential environmental and community effects of the recommendation prior to implementation.

- Any supplemental environmental documentation required to implement the recommendation is funded by the non-DoN service requesting the additional usage.

- Implementation does not cause the cumulative adverse impacts to the State of North Carolina to increase to the point that airspace usage restrictions adversely effect Navy and Marine Corps training.

DoN is not sufficiently knowledgeable of Air Force Training requirements, and therefore can not comment in detail as to what degree DoN ranges can satisfy Air Force requirements.

Use need and scheduling coordination could be accomplished through specific range managers and/or AIRLANT.

Final Report Reference

9, Para. 1

II. Finding B - TRAINING SIMULATORS

A. Summary of the Finding:

The Military Departments were developing separate threat simulator program for training at the risk of promoting unnecessary duplication because they did not implement the internal controls necessary to ensure that their threat simulator requirements were properly reviewed and coordinated before development, acquisition, or upgrade. As a result, the Military Departments have programmed over $194 million to develop four simulator systems that include replications of the same advanced threat signals.

B. Navy Comments on Specific facts in the audit:

10, Para. 1

Page 14, paragraph 3 - **"Each project office was managing and controlling its training threat simulator program without coordinating with the other Military Departments."** Specifically, the Navy was developing a Threat Radar Emitter System (TRES); and the Air Force was developing the Advanced Tactical Threat Emitter System (ATTES) and mobile Advance Threat System '(MATS)". CROSSBOW-S has done a detailed study and report on TRES, ASET IV, and UMTE programs. From an overall NAVY cost effectiveness stand point, differences between the Services' requirements historically have precluded any major cost saving by consolidation of training EW threat simulators. (As a note of interest the ATTES program has been terminated and the MATS program is still in the requirements development stage.)

For example:

The ARMY has a requirement for visual replication of a threat radar and vehicles to be visually identical at 100 yards. The NAVY and air Force do not.

The ARMY has a requirement for highly mobile simulators. The NAVY and Air Force do not.

The ARMY has requirements for simulators that operate during vehicle motion. The NAVY and Air Force do not.

The NAVY has requirements to operate its EW training simulators against NAVY EW (RWRs etc.) equipments to operate its EW training simulators against NAVY EW (RWRs etc.) equipment using NAVY communications equipment on NAVY TACTS EW training ranges. The ARMY does not.

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The above mentioned service technical requirements carry recurring as well as non-recurring costs. The recurring cost of the other service requirements can outweigh any non-recurring cost savings due to commonality at the DoD level. If these requirements were incorporated into one corporate DoD design the NAVY might pay more than it does now. The NAVY EW threat radar simulators, when different from the Air Force units, are usually the most cost effective solution and subjected to only the very essential requirements.

10, Para. 1

Page 15, paragraph 1 - **"Also, the Military Departments did not submit their acquisition plans to the CROSSBOW-S Committee for review and coordination, as required."** Navy representatives of CROSSBOW-S have coordinated with CROSSBOW-S as early as May 88. The Navy's TRES acquisition plan was addressed at various CROSSBOW forums in DEC 88, FEB 89, JUL 89, SEP 89, JUL 90, MAY 91, and MAR 92. An independent comparative study conducted by the CROSSBOW Management Office that was completed in April 89, determined that there was some duplication of effort between the TRES (Navy Program) and the UMTE (Air Force Program). However, the conclusions and recommendations of that report recommended that due to the minimal overlap of effort and the disparity in service requirements, that the programs proceed as planned.

NAVAIR program efforts are concentrated toward development of replica-grade simulators for Test and Evaluation, (T&E). In the T7E simulator program, the EXCOM is briefed regarding ongoing development efforts. No development efforts have been initiated since September 1991; however, the EXCOM has been briefed on potential new starts and acquisition plans will be chopped through CROSSBOW-S Committee regarding training simulators. Consolidation of DOD simulator development funds has been adequately addressed by the DDRE (T&E) Threat Simulator Study Group.

12, Para. 3

B. OAIG(A) Recommendation on the Finding:

1. Recommend that the Director, Defense Research and Engineering, consolidate funding for the Threat Simulator Program.

Department of the Navy Comments:

1. Do not concur. As stated by the DDE (T&E), Simulator study group, a large simulator development budget line will be subject to increased congressional budget actions resulting in diminished development capability. Coupled with the potential loss of additional funds is the administrative process compounded by consolidating all development funds at the OSD level.

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This additional administrative process will further delay contracting activities and potentially lead to increased simulator development cost. Also, this has been addressed and previously rejected by DOD as stated in the report's summary of previous audits. Consolidation of procurement funding for EW training simulators is not appropriate because of the significant differences in service requirements.

14, Para. 2

2. Recommend that the Chairman of the Construction of a Radar to Operationally Simulate Signals Believed to Originate Within the Soviet Union Committee schedule a review of the Military Departments' acquisition plans for advanced threats on the Aircraft Survivability Equipment Trainer IV, Threat Radar Emitter System, Advanced Tactical Threat Emitter System, and Mobile Advance Threat System to prevent unnecessary duplication.

Department of the Navy Comments:

2. Partially concur. This has already been done to some degree. NAVAIR has coordinated with the CROSSBOW-S committee on program plans, and provided information for previous studies of the unnamed emitter programs.

15, Para. 5

3. Recommend that the Director, Defense Research and Engineering, update Threat Simulator Program Guidelines to include the statement, "Military Departments shall obtain CROSSBOW-S approval of threat simulator development, acquisition, or upgrade before program funding approval."

Department of the Navy Comment:

3. Do not concur. CROSSBOW-S is already coordinating the services programs.

General comments:

The introduction of the Executive Summary, states that the services have budgeted $1.5 billion for threat simulators for training for FY 90 through 94. For the period FY 90-94 the Navy Aircrew Electronic Warfare Training Ranges (AEWRT) budget for threat simulators of the type that the auditors talked to NAVAIR personnel about was about 45 million dollars (3% of the total DoD program for EW simulators). For FY 92, Navy budgeted $7,474,000 for this program, of which $1,806,000 was dedicated to emitter procurement.

Department of the Air Force Comments

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

11 MAY 1992

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

SUBJECT: DoD(IG) Draft Report, Audit of the DoD Management of Electronic Warfare Threat Simulators for Training, (Project No. 1AB-0032) -- INFORMATION MEMORANDUM

Attached are Air Force comments for subject report.

The SAF/FMPF point of contact is Mr. Roscoe Higginbotham, extension 703-697-6051.

VAUGHN E. SCHLUNZ
Director for Audit
Liaison and Followup
(Financial Management)

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

18 MAY 1992

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

SUBJECT: DoD(IG) Draft Report, "Audit of the DoD Management of Electronic Warfare Threat Simulators for Training," (Project No. 1AB-0032)
-- INFORMATION MEMORANDUM

This is in reply to your memorandum requesting the Assistant Secretary of the Air Force (Financial Management and Comptroller) to provide Air Force (AF) comments on subject report.

Analysis of the report by Headquarters Tactical Air Command (TAC), Strategic Air Command (SAC), Air Force Materiel Command (AFMC), and the Air Force Directorate of Test and Evaluation (AF/TE) leads Headquarters USAF to concur in general with the draft audit. This memorandum summarizes those comments contained in the attached discussion paper.

The AF spent/programmed approximately $200 million on all threat simulators (both test and training) during the audited time frame. It is unlikely the $1.5 billion figure for all the Services is correct.

The AF disagrees that controls are not in place for reviewing and coordinating the Military Departments' acquisition plans for advanced threat simulators. We also disagree that "...the Military Departments did not submit their acquisition plans to the CROSSBOW-S Committee for review and coordination..." The Air Force's only planned threat system was briefed to the CROSSBOW-S Committee well in advance of any detailed planning.

We agree that TAC does not have the EW simulator assets necessary to effectively train aircrews on the east coast. Previous AF initiatives to fund new ranges were not Congressionally supported. TAC's use of the mobile 87th Electronic Warfare Aggressor Squadron helps to alleviate the lack of training ranges as well as the impacts of base closures. The AF also pays to use the Navy's Mid-Atlantic Electronic Warfare Range to supplement our scarce resources.

We do not have any advanced simulators programmed or funded. The report assertion that the Services have programmed over $194 million for simulators that replicate the same signals therefore does not apply to the AF.

The AF takes no issue with the assertion that there is duplication among some of the Services' threat simulator programs. The Services and the CROSSBOW-S Committee, however, agree that duplication is justified for existing, mature systems programmed for upgrades.

Finally, the AF still believes that OSD, through the CROSSBOW-S Committee, has sufficient controls in place without resorting to consolidated funding through the Director, Defense Research and Engineering. Similarly, we have not been able to quantify any monetary benefits as yet that would result from implementation of report recommendations.

ANDREW N. VITTORIA, JR., Colonel, USAF
Chief, Electronic Combat Division
Director of Operations
DCS, Plans and Operations

Atch
Discussion Paper

cc: AF/XOO (Info)
AF/XOOL (Info)
AF/XOR (Info)
AF/TER (Info)
SAF/FMPF

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REVIEW OF THE
REPORT ON THE AUDIT OF THE DOD MANAGEMENT OF
ELECTRONIC WARFARE THREAT SIMULATORS FOR TRAINING
PROJECT NO. 1AB-0032
(Discussion Paper)

1, Para. 1

Page 1, Background. "The Military Departments have budgeted $1.5 billion for simulator development, acquisition, and upgrade during FYs 1990 through 1994."

COMMENT: The $1.5 billion dollar figure is suspect. The table below shows the total AF R&D dollars spent/programmed on threat simulators from FY 90-94 ($56.388M) and the total AF procurement dollars spent during the same period ($140.753M), as of 31 May 91. (The DoDIG conducted the audit from March through November 1991.) Including the R&D dollars for T&E simulators, the $1.5B figure is still extremely high. The IG only looked at five Air Force systems: Mobile Advanced Threat System (MATS), Unmanned Threat Emitter (UMTE), Multiple Threat Emitter System (MUTES), Mini-MUTES, and Advanced Threat Training Emitter System (ATTES). Note: MUTES is not included below because funding ended for this program prior to FY 90.

AF R&D FUNDING FOR THREAT SIMULATORS (as of 31 May 91)

SYSTEM	1990	1991	1992	1993	1994	TOTAL
ATTES	0.200	0.189	5.420	6.180	6.819	18.808
HAVE PEWTER	10.213	6.000	6.150			22.363
HAVE COPPER	1.921	4.418	2.850			9.189
SADS-17				0.850	5.178	6.028
TOTAL R&D	**12.334**	**10.607**	**14.420**	**7.030**	**11.997**	**56.388**

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AF PROCUREMENT FUNDING FOR THREAT SIMULATORS (as of 31 May 91)

SYSTEM	1990	1991	1992	1993	1994	TOTAL
MINI-MUTES	35.193	23.008	13.820	16.012	14.300	102.333
UMTE	13.229	6.200				19.429
MATS					4.717	4.717
TOTAL PROC	**48.422**	**29.208**	**13.820**	**16.012**	**19.017**	**126.479**

The following table shows the funding profile for AF threat simulators from FY 90-94, as of 29 Feb 92. The difference in funding from May 91 to Feb 92 is $17.613M less in R&D and $16.006M less in procurement. The major changes were that ATTES was cancelled (the funds were transferred to Computer Generated Threats, SADS-17 funding was transferred to a classified PE (no longer tracked through the Range Improvement Program (RIP), Mini-MUTES was reduced approximately $16M due to force structure and funding changes, HAVE PEWTER lost $6.150M in FY 92 (Congress denied funding), and the SA-10/SA-12 Emitters were added (money was taken from programs within the RIP).

AF R&D FUNDING FOR THREAT SIMULATORS (as of 29 Feb 92)

SYSTEM	1990	1991	1992	1993	1994	TOTAL
MATS				0.500		0.500
ATTES	0.200	0.060	0.075			0.335
CMP GEN THRT				1.162	6.737	7.899
HAVE PEWTER	10.213	6.000				16.213
HAVE COPPER	3.900	4.418	0.653			8.971
SA-10 EMITTER			2.107	0.900		3.007
SA-12 EMITTER			1.500			1.500
SADS-17				0.850		0.850
TOTAL R&D	**14.313**	**10.478**	**4.335**	**2.912**	**6.737**	**38.775**

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AF PROCUREMENT FUNDING FOR THREAT SIMULATORS (as of 29 Feb 92)

SYSTEM	1990	1991	1992	1993	1994	TOTAL
MINI-MUTES	39.960	9.753	15.520	11.594	9.500	86.327
UMTE	13.229	6.200				19.429
MATS					4.717	4.717
TOTAL PROC	**53.189**	**15.953**	**15.520**	**11.594**	**14.217**	**110.473**

At best, the Air Force spent/programmed about $200M on all threat simulators (both test and training) during the FY 90-94 time frame.

1, Para. 3

Page 2, Scope. "This economy and efficiency audit was made from March through November 1991..." It goes on to state that "we obtained and reviewed data for fiscal years 1977 to 1991 on seven threat simulator programs for training."

COMMENT: If the audit covered this period of time, for all Services, then it may explain how $1.5B could be accumulated.

1, Para. 4

Page 3, Internal Controls. "Controls were not in place for reviewing and coordinating the Military Departments' acquisition plans for advanced threat simulators.

COMMENT: Actually, the only advanced threat training system the Air Force had plans for was the Advanced Threat Training Emitter System (ATTES). During the 31 July 1990 OSD Threat Simulator Program Review, being conducted under the auspices of the CROSS-BOW-S Committee, the Air Force provided an information briefing on future plans for the ATTES program. This was in advance of detailed planning and Air Force requirements development, but was surfaced at this early date to specifically appraise the other Services of the plan at that time. Subsequently, and with the coordinated efforts of the CROSSBOW-S Chairman and Committee members, on 17 Jan 91 the Air Force hosted a Joint Services Requirements Review at Eglin AFB, FL to specifically meet with the other Services and discuss the outyear plans for ATTES, to begin to determine if there was any potential for a joint Service effort. This initial meeting set the stage for future review of the Air Force requirement documentation by the Army and Navy, once the Air Force had their requirements clearly defined. Unfortunately, due to funding restraints, the ATTES program never materialized and, hence, further requirements for ATTES stopped. Unfortunately, the DoDIG report implies that ATTES was/is a

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program with plans, resources, etc. Since the ATTES program was cancelled by the Air Force, the implication is incorrect.

3, Para. 1

Page 5, Electronic Warfare Training Assets. "The Air Force Tactical Air Command (TAC) did not have the EW simulator assets required to effectively train aircrews on the east coast."

COMMENT: Concur. Our current Electronic Combat (EC) concept of training requires optimizing combat readiness within a framework of strained funding and limited availability of assets. We are pursuing better utilization of limited threat simulators for east coast based units.

A TAC initiative to expand Townsend Range, GA, to provide a quality multi-purpose range for those units was canceled in 1990 due to lack of support from Congress. The Southeast Range (proposed name) would have provided a training environment with realistic tactical target arrays, an EC range, and an Air Combat Maneuvering Instrumentation Range.

6, Para. 3

Page 12, Recommendations for Corrective Action.

"1. We recommend that the Commander, TAC, direct training officials at TAC headquarters to use the Navy's Mid-Atlantic Electronic Warfare Range (MAEWR) to offset the shortfall in realistic Electronic Combat/Warfare training on the east coast."

COMMENT: Per previous agreement with COMNAVAIRLANT, Norfolk VA, the Air Force currently has six MAEWR range periods per week reserved for sole use. There are no reimbursements associated with use of the range during these periods. Only higher priority events (Fleetex or other major exercise) can preempt these reserved times. The MAEWR provides the capability for good training opportunities for east coast based aircrews. The 6 threat simulators on the range, when utilized in conjunction with the Tactical Aircrew Combat Training System (TACTS), provide an EC flying environment and a real-time debriefing capability for bases with a Miniature Display Debriefing Subsystem (MDDS). MDDSs are programmed for installation at Eglin AFB, FL, Homestead AFB, FL (active duty and reserve), Langley AFB, VA, Moody AFB, GA, Seymour Johnson AFB, NC, Shaw AFB, SC, McEntire ANGB, SC, and Tyndall AFB, FL during FY 93. The MDDS offers a complete mission replay capability within 45 minutes after knock-it-off. This type of debriefing capability greatly enhances the benefits from flying on MAEWR when both positive and negative performances can be evaluated and corrected as required. It is important to note that the distance to MAEWR limits the Florida bases from effectively utilizing the range except when in a deployed status.

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7, Para. 3	"2. We recommend that the Air Force Chief of Staff review the present location of all training threat simulators and realign such assets in order to ensure that all aircrews receive adequate Electronic Warfare training." **COMMENT**: The Air Force continuously reviews operational beddown locations of all units (to include simulator assets) to optimize training and ameliorate the effects of base closures. One such effort has resulted in the highly successful use of the 87th Electronic Warfare Aggressor Squadron (EWAS). The mission of the 87 EWAS is to improve Electronic Warfare readiness of active duty, reserve, and national guard units by deploying with its simulator assets to provide on-site training. The 87 EWAS was formed in Oct 90 using the assets previously located on the Avon Park Electronic Combat Range (located in central Florida). These assets (18 threat simulators) are better utilized in this mobile format, providing valuable training opportunities to units not located in proximity to central Florida. At deployed sites, the 87 EWAS provides a mobile small-scale EC range capable of providing training for aircrews. This training requires interpretation of radar warning receiver displays, activation of electronic countermeasure equipment, and performance of proper evasive maneuvers. A total of 14 training deployments are scheduled in FY 92 and 9 in FY 93. The current TAC policy is that the 87 EWAS will deploy to each operational unit at least once per fiscal year. Future goals include fielding a second deployment team and assets to expand the scope of training.
9, Para. 1	**Page 13, Training Simulators.** "...As a result, the Military Departments have programmed over $194 million to develop four simulator systems that include replications of the same advanced threat signals. **COMMENT**: The Air Force had programmed funds for only one advanced threat simulator, the Advanced Threat Training Emitter System (ATTES), an upgrade to an existing system, Mini-MUTES. The ATTES was cancelled by the user (SAC). Currently, the Air Force has no money programmed for any advanced threat emitter. The other Services' planned advanced threat systems were upgrades to existing systems, as well.
9, Para. 5	**Page 14, Management and Control of Threat Simulator Programs.** "...Also, the Military Departments did not submit their acquisition plans to the CROSSBOW-S Committee for review and coordination, as required." **COMMENT**: The CROSSBOW-S Committee has been aware of all of the existing and planned Air Force threat simulator programs

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mentioned in this report, as well as all Test and Evaluation simulators, not covered in this report. It is factually incorrect to state that the CROSSBOW-S Committee was not aware of and informed of the Air Force plans to develop and acquire threat simulators.

10, Para. 2

Page 15, Duplication of Advanced Threat Signals. "In evaluating the ASET IV, TRES, ATTES, and MATS acquisition plans, we found duplication among the Military Departments. Developmental costs are being paid for in each of the four systems being developed for the same threat signals (with the exception of two signals contained on the ASET IV and MATS."

COMMENT: While it is true that there is duplication among some of the Services' threat simulator programs, the issue here is whether the duplication is justified. The ASET IV, TRES and ATTES (upgraded Mini-MUTES) are either existing systems or upgrades to existing systems. With the full knowledge of the CROSSBOW-S Committee, the Air Force chose to upgrade Mini-MUTES, itself an upgrade to the MUTES system, with advanced threat signals. Attempting to use other Services' existing systems as the platform to add advanced threats for Air Force use would not have been a prudent course of action. The same was true for the other Services. Considering the maturity of each of the programs, the Services and CROSSBOW-S Committee agreed that proceeding with these programs as planned was necessary duplication warranted by the situation.

12, Para. 3

Page 20, Recommendations for Corrective Action.

"1. We recommend that the Director, Defense Research and Engineering, consolidate funding for the Threat Simulator Program."

COMMENT: In FY89, DoD consolidated the Services' threat simulator program funding into an OSD Program Element. The Services did not agree with the OSD decision to consolidate funding for several reasons. One of the most important reasons was that the Services would still have the responsibility for executing the programs but have no funding authority. Also, the Services believed that OSD already had sufficient controls (withhold authority, PBD actions, EXCOM/CROSSBOW-S oversight) to preclude the Services from spending funds on unnecessary duplication of threat simulators. The Air Force still believes that OSD has sufficient controls in place without resorting to consolidating funding.

14, Para. 2

"2. We recommend that the Chairman of the CROSSBOW-S Committee schedule a review of the Military Departments' acquisition

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plans for advanced threats on the ASET IV, TRES, ATTES and MATS to prevent unnecessary duplication."

COMMENT: We believe that the CROSSBOW-S Committee already has full knowledge of the Services' plans to upgrade existing threat simulators (to include advanced threats) through its routine committee meetings, CROSSBOW-S charter, and the Chairman's familiarity with the Services' programs.

15, Para. 5

"3. We recommend that the Director, Defense Research and Engineering, update Threat Simulator Program Guidelines to include the statement, "The Military Departments shall obtain CROSSBOW-S approval of threat simulator development, acquisition, or upgrade before program funding approval."

COMMENT: The DoD Executive Committee on Threat Simulators (EXCOM) and CROSSBOW-S Committee charters already require that the Services get EXCOM approval before starting a new threat simulator program.

19, Para. 1

Page 21, Fire Suppression Contract at the Dare County Bombing Range. "...Fire suppression at the Dare County Bombing Range was not cost-effective."

COMMENT: Concur. As stated in the report, the TAC/DO had previously identified this finding.

20, Para. 5

21, Para. 1

Page 25, Recommendations for Corrective Action. That the Commander, TAC "direct the Commander of the Seymour Johnson Air Force Base to conduct a Cost Comparison Study to determine the most cost-effective alternative to providing fire suppression to the range." Further, "take the necessary action to pursue the most effective alternative method of fire suppression for the range."

COMMENT: We agree that this issue requires analysis and action to produce a more cost-effective fire suppression contract. The 4th Wing at Seymour Johnson Air Force Base has been working this issue, and solutions to reduce cost of fire suppression at Dare County are being formulated. To avoid jeopardizing the operation of the Dare County Range, proposed solutions and alternatives must be thoroughly reviewed. Studies show, for instance, that a portion of the work (especially in the road repair category) would cost more if done by private contractor or civil service employees. Also, if the contract is canceled with the State of North Carolina, new facilities will have to be built off of the current State-owned land. FY92 and FY93 costs for the North Carolina Fire Suppression Contract were reduced from over $1 million per year to $800K. Therefore, this action item should not go forward in the final report. The 4th Wing continues to work the issue.

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