DEPARTMENT OF DEFENSE

AUDIT REPORT

DoD MANAGEMENT OF THREAT SIMULATORS

No. 90-089

June 27, 1990

Office of the Inspector General

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

June 27, 1990

MEMORANDUM FOR DEPUTY DIRECTOR, DEFENSE RESEARCH AND ENGINEERING (TEST AND EVALUATION)

SUBJECT: Final Report on the Audit of the DoD Management of Threat Simulators (Report No. 90-089)

This is our final report on the Audit of the DoD Management of Threat Simulators for your information and use. Comments on a draft of this report were considered in preparing the final report. We made the audit from July 1989 through January 1990. The objectives of the audit were to determine the effectiveness of DoD's management of threat simulators and to evaluate internal controls limiting the proliferation of threat simulators. The range of simulator equipment includes everything from computer mathematical models to replicas of radars and missile seekers located at laboratories, indoor test facilities, and open-air test ranges. The Deputy Director, Defense Research and Engineering (Test and Evaluation) (the Deputy Director), established committees within OSD to centrally manage the Threat Simulator Program (the Program). However, each Service had its own Program with differing approaches to simulator development that resulted in unnecessary duplication and unnecessary increases in Program costs. The Services and OSD programmed $1.5 billion for simulator projects for FY 1990 through FY 1994.

The audit showed that the Deputy Director significantly improved management of the Program in recent years, but that more effective centralized control is needed to provide a coordinated, joint-Service approach to threat simulator development and acquisition. The Deputy Director's rechartering of the Executive Committee on Threat Simulators (EXCOM) and the CROSSBOW-S Committee (CROSSBOW) in December 1987, and issuance of DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," are particularly noteworthy in that these initiatives enhanced communication and overall direction among the Services and OSD. The results of the audit are summarized in the following paragraphs, and the details, audit recommendations, and management comments are in Part II of this report.

Despite good progress, we found that the Program control was not adequate and that the Services were not fully committed to joint threat simulator development and acquisition. As a result, the Services purchased two signal processors totaling $75 million when an alternative was available for $14 million, delayed development of a required threat simulator, and did not support

EXCOM threat simulator projects. Also, the Services may pay unnecessary duplicative engineering costs totaling $14.4 million between FY 1990 and FY 1994. We recommended that the Deputy Director charter a Joint Threat Simulator Program Office (Joint Program Office) at the OSD level using the CROSSBOW Management Office as its core. We also recommended that the Joint Program Office provide centralized control of threat simulator funds (but not perform accounting functions); provide review and oversight of all threat simulator requirements, developments, acquisitions and upgrades including grandfathered projects; ensure that each of the Services are adequately represented in Joint Program Office; and coordinate Service threat simulator requirements (page 3).

The audit identified 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 effective to provide a comprehensive, joint-Service approach to acquisitions, developments, and upgrades of threat simulators. Also some internal controls were not effective to preclude unnecessary duplication. All recommendations of the finding will correct these weaknesses. The senior official responsible for internal controls within the Department of Defense is being provided a copy of this report.

The Deputy Director partially concurred with the recommendation to charter a Joint Program Office at the OSD level stating that while he agreed with the concept of an independent Joint Program Office, he believed that manpower and funding constraints made approval of such changes unlikely ". . . in the near term." As an alternative he proposed to achieve the flexibility and authority envisioned in the recommendations by redesignating, but not fully staffing, the CROSSBOW Management Office as the Joint Program Office and augmenting its staff with the support of the CROSSBOW-S Committee. The Deputy Director concurred with the recommendations to centrally manage simulator funds, provide decentralized simulator budget execution, include adequate Service representation in the Joint Program Office, and coordinate all Service simulator requirements through the Joint Program Office stating that simulator funds will be consolidated at the OSD level effective FY 1992 and remaining changes will be implemented in the May 1991 publication of revised DoD Directive 5000.3-M-6. The Deputy Director nonconcurred with $15.7 million of the $30.1 million of monetary benefits because two of the systems have since been completed and a third has progressed to where modification and integration costs would offset envisioned savings. Also, the Deputy Director did not fully concur with the discussion of unspecified budget reductions, stating that the Navy did not apply a $1.2 million unspecified budget reduction to

the TRES development project. The complete text of management's comments is in Appendix E.

As a result of the Deputy Director's comments, we have revised our estimate of the potential monetary benefits identified in Appendix D from $30.1 million to $14.4 million. We also revised the chart on unspecified budget reductions (page 4) to show a $1.2 million reduction to the Emitter Simulations project instead of to the TRES Development project and changed Recommendation a. to delete abolishing the CROSSBOW-S committee.

The management responses to a draft of this report conformed to the provisions of DoD Directive 7650.3. No unresolved issues existed on the audit recommendations, internal controls, or potential monetary benefits. Accordingly, additional management comments on the final report are not required.

The courtesies extended to the audit staff are appreciated. A list of audit team members is in Appendix H. If you have any questions on this audit, please contact Mr. Raymond Spencer at (202) 694-3995 (AUTOVON 224-3995), or Mr. Steven Hughes at (202) 693-0362 (AUTOVON 223-0362). Copies of this report are being provided to the activities listed in Appendix I.

Edward R. Jones
Deputy Assistant Inspector General
for Auditing

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

FINAL REPORT ON THE AUDIT OF THE DOD MANAGEMENT OF THREAT SIMULATORS

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Prepared by:
Acquisition Management Directorate
Project No. 9AB-0057

FINAL REPORT ON THE AUDIT OF THE DOD MANAGEMENT OF THREAT SIMULATORS

PART I - INTRODUCTION

Background

The Threat Simulator Program (the Program) evolved from a single Service concept to a tri-Service and OSD effort with $1.5 billion programmed for threat simulator development, acquisition, and upgrade during FY 1990 through FY 1994. Threat simulator is a term for equipment having characteristics of actual threat weapon systems. Threat simulation is achieved by using mathematical computer models, combining hardware with computer models, and building hardware replicas of radars and missile seekers. Simulators are used in laboratories, indoor test facilities (chambers), and open-air test ranges to test the effectiveness and survivability of U.S. weapon systems and to train military personnel.

The Under Secretary of Defense for Acquisition, through the Deputy Director, Defense Research and Engineering (Test and Evaluation) (the Deputy Director), provides overall Program policy guidance, direction, and oversight. The Deputy Director established the Executive Committee on Threat Simulators (EXCOM) and the CROSSBOW-S Committee (CROSSBOW) to implement the Program (see Appendix A). The Deputy Director chairs EXCOM, which in turn, provides direction to CROSSBOW. To achieve a coordinated, joint-Service approach to simulator development and acquisition, the Deputy Director rechartered these committees in December 1987, and issued specific Program direction to the Services in DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," in April 1989.

Objectives and Scope

Our overall objectives were to evaluate the effectiveness of DoD management of threat simulators and the adequacy of internal controls to limit the proliferation of threat simulators. We focused on whether:

- the committees were capable of accomplishing stated missions,

- the Services were committed to joint simulator projects, and

- ongoing and planned threat simulator development, acquisition, and upgrade projects were unnecessarily duplicative.

We reviewed EXCOM and CROSSBOW mission statements and charters to identify chains of authority and responsibility. We evaluated the advantages and limitations of the Program management approach. We compared FY 1988 through FY 1994 simulator requirements justifications for Army, Navy, and Air Force to the OSD approved requirements lists to determine whether Service priorities reflect Program plans. We also evaluated the planned and ongoing simulator projects to determine Service commitment to joint efforts and use, OSD's ability to influence Service simulator projects, and whether the Program prevented unnecessary duplication. The potential monetary benefits identified in Part II of this report are not projected but are based on our analysis of 19 of the 56 ongoing simulator projects.

Internal Controls

We evaluated internal controls contained in DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," EXCOM and CROSSBOW charters, and mission statements. Internal controls were not effective to provide a comprehensive, joint-Service approach to threat simulator developments, acquisitions, and upgrades. Also, some internal controls were not effective to preclude unnecessary duplication.

This program results audit was made from July 1989 through January 1990 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. A list of the activities visited or contacted is in Appendix G.

Prior Audit Coverage

General Accounting Office (GAO) Report No. GAO/MASAD-88-93, "Electronic Warfare, Multiple Developments of Costly Threat Simulators," February 1, 1988, OSD Case No. 7424, focused on replicas of Soviet air defense weapon systems, including surface-to-air missiles and guns. GAO found that the Services were paying for the development of simulators more than once, simulators misrepresented threat systems, faulty simulators could distort test results of major systems and training effectiveness, and the absence of effective internal controls contributed to faulty simulators. GAO recommended that the Secretary of Defense ensure that EXCOM and CROSSBOW centrally manage simulator programs; require the Services to segregate responsibilities for development, test, and acceptance of simulators as valid representations of the threat; and assign the responsibility for monitoring the quality and adequacy of simulators to an appropriate DoD element. These recommendations were implemented in the EXCOM and CROSSBOW charters in December 1987, and in DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," in April 1989.

PART II - FINDING AND RECOMMENDATIONS

Joint Threat Simulator Program Office

FINDING

OSD did not provide adequate centralized control of the Threat Simulator Program (the Program) to ensure a coordinated, joint-Service approach to simulator development, acquisition and upgrade. This occurred because OSD managed the Program through committees that lacked the independence, Service support, and internal controls needed to effectively and efficiently manage the Program. As a result, the Services purchased two signal processors totaling $75 million when an alternative costing $14 million was available, did not support OSD sponsored threat simulator projects, and may pay $14.4 million for duplicative engineering costs between FY 1990 and FY 1994.

DISCUSSION OF DETAILS

Background. The mission of the Executive Committee on Threat Simulators (EXCOM) is to provide management, policy, guidance, and Program approval for all DoD simulator projects. EXCOM has senior representatives from OSD, each of the Services, and the intelligence community (See Appendix B). EXCOM meets at the request of the Deputy Director, Defense Research and Engineering (Test and Evaluation) (the Deputy Director) or at least quarterly. EXCOM uses a subcommittee, CROSSBOW-S (CROSSBOW), to fulfill its mission. CROSSBOW is the technical arm of EXCOM and also consists of representatives from each of the Services and the Defense Intelligence Agency (See Appendix C). The mission of CROSSBOW is to review, coordinate, and implement all aspects of the EXCOM approved Program for air defense and air defense-related simulators. This mission is accomplished through the CROSSBOW Management Office.

To preclude classifying this report, we used unclassified Service nomenclatures to identify threat simulator systems. Also, we did not describe the systems or how they function.

DoD Directive 5000.3-M-6, "Threat Simulator Program Policy and Procedures," provides the rationale and structure to subject U.S. weapons systems and combat crews to realistic threat environments and prescribes the processes, from requirements justification through simulator validation. The goals of the Program, as stated in DoD Directive 5000.3-M-6, are to provide:

> . . . the necessary test and training resources, prevent unnecessary duplication, ensure the adequacy of the simulators to represent the threat, and provide a coordinated, joint-Service approach to timely simulator development and acquisition . . . .

To that end, DoD Directive 5000.3-M-6 requires the Services to identify their simulator requirements to EXCOM for approval. The DoD Directive further requires EXCOM to review the requirements and eliminate unnecessary duplication, and when more than one Service indicates a requirement for the same simulator, appoint a lead Service to prepare and execute acquisition plans.

The Program evolved from a single Service effort to an OSD sponsored organization of significant complexity. Despite the Deputy Director's improvements to Program management in recent years, some problems persisted. Among the problems were the perceived lack of Program independence, the lack of Service support of EXCOM priorities, and the lack of internal controls, as discussed below.

Independence. CROSSBOW's alignment with the Army creates the appearance of a lack of independence. Historically, the Army provided the CROSSBOW chairman, the Army Missile and Space Intelligence Command (the Command) prepared Personnel Performance Appraisals for the CROSSBOW chairman, and the CROSSBOW Management Office was located in the Command and received daily support and resources from the Army. Also, the other Service members believed that CROSSBOW was more oriented towards Army efforts.

Service Support. The Services did not always support the Program or EXCOM approved development priorities. We found that the Services reprogrammed simulator funds and delayed executing OSD directed Program projects, while emphasizing Service projects or goals. For example, at the end of FY 1989, both the Army and the Navy experienced unspecified budget reductions of $9.1 million and $5.6 million, respectively. The following OSD approved simulator projects were used to absorb the reductions:

ARMY		NAVY	
Simulator Project	Funds	Simulator Project	Funds
TAR Simulator	$4.3	GAR Development	$2.2
HIP J/K Simulator	4.8	I-15 Upgrade	2.2
		Emitter Simulations	1.2
Total ($ Millions)	$9.1		$5.6

As a result, the Navy risks canceling the GAR simulator project (a $28 million project with approximately $19 million invested) if funds are not reinstated.

The Have Iron simulator is a specific example of the Services not carrying out OSD approved Program priorities. All three Services have highly visible, costly weapon systems that require testing against the surface-to-air systems represented in Have Iron. In

FY 1986, EXCOM assigned a high priority to Have Iron development and the Air Force offered to be, and was appointed, lead Service for that development effort. In FY 1986, OSD funded the intelligence analysis of the threat parameters and technical specifications for the Have Iron system. In FY 1988 and FY 1989, the Air Force budgeted $1.0 million and $2.4 million, respectively, to begin the Have Iron development effort. Both the Air Force and the Army programmed development funds in the FY 1990 through FY 1994 Five-Year Defense Plan. In February 1989, the Air Force unilaterally canceled the project and reprogrammed all funds, approximately $59.3 million. Following the Air Force's lead, the Army reprogrammed its Have Iron funds in FY 1989.

Internal Controls. The program lacked internal controls needed to provide a comprehensive joint-Service approach to threat simulator development, acquisition, and upgrade and to prevent unnecessary duplication. Those deficiencies were inadequate staff to accomplish the mission; indistinct lines of authority and responsibility for the Program execution; and no control of threat simulator funds to ensure a coordinated, joint-Service approach to simulator development. Those deficiencies are discussed in the following paragraphs.

Staff. The CROSSBOW Management Office consisted of 10 full-time employees. This staff was augmented by contractor personnel for day-to-day support, and by Service personnel for support of special projects. Our interviews with cognizant CROSSBOW and Service personnel indicated that there were shortfalls and limitations to what the CROSSBOW Management Office was able to accomplish with this staff. Some examples of shortfalls and limitations include CROSSBOW's inability to effectively:

- develop and maintain standard validation criteria for all air defense and air defense related simulators,

- review Test and Evaluation Master Plans,

- provide needed intelligence data to the Services promptly,

- understand technical test and engineering processes associated with such things as parametric data and validation, and

- conduct enough workshops to adequately share technical experiences.

According to the CROSSBOW Management Office, approximately 30 full-time employees are needed to accomplish CROSSBOW's basic mission functions. In addition, we believe that the Services should continue to provide personnel as required to augment the Joint Program Office's staff in support of special projects. This would ensure joint-Service participation in projects and promote standardization of threat simulators.

Program Execution. The Deputy Director did not have oversight responsibility of simulator projects initiated before April 1989 and Program personnel were not aware of the test needs of some classified projects. Further, each Service devised its own approach to simulator development and had facilities and ranges with varied degrees of simulation capability. This resulted in inefficient procurement practices, a lack of Program oversight, and the lack of uniform threat definitions for developing threat simulators, as discussed below.

Procurement Practices. The Services were reluctant to participate in joint-Service threat simulator procurements. In one instance, the Air Force purchased two Have Pewter signal processors totaling $75 million when an alternative was available for $14 million. The signal processors represented about $75 million of the $120 million committed to the Have Pewter acquisition. EXCOM directed CROSSBOW to conduct a detailed comparison of the Air Force's Have Pewter system and its threat, and the Navy's I-15 system and its threat. CROSSBOW found that the I-15 signal processor was adequate for use in lieu of the Have Pewter signal processor. The cost of the two I-15 signal processors totaled $14 million. The Air Force, not required to adhere to EXCOM's recommendations before the rechartering of EXCOM and CROSSBOW, awarded a contract to develop two Have Pewter systems. Subsequently, the Have Pewter signal processors did not work, and the Air Force estimates the repair costs to range from $26 million to $40 million.

We analyzed 19 of 56 ongoing projects and determined that it will cost $14.4 million to pay for avoidable duplicative efforts on 6 of the projects (see Appendix D). For example, the Army awarded a contract to develop and install three Have Copper simulators, two for the Army and one for the Air Force. The Air Force identified a requirement for two additional units but did not task the Army to acquire them under the existing contract. Instead, the Air Force awarded another contract to the same vendor for the additional two units and will pay duplicative nonrecurring engineering costs totaling approximately $4 million.

Program Oversight. CROSSBOW's charter limited simulator oversight to air defense and air defense-related projects initiated after April 1989, and did not include certain classified projects, regardless of when they were initiated. Before EXCOM and CROSSBOW were rechartered, the Services issued contracts for simulator projects, some of which were not

scheduled to be started until 1994. The Services considered these future efforts, along with the ongoing projects, to be "grandfathered", and therefore, not subject to EXCOM's centralized Program oversight. EXCOM and CROSSBOW attempted to exert influence over these projects but their charters did not specifically address grandfathered projects. We believe that all projects, both ongoing and planned, should be subject to centralized Program oversight and management. For example, some of the "grandfathered" projects could be standardized but will be individually developed to differing specifications, creating the potential for incurring duplicative engineering costs. CROSSBOW was performing a 6-month study of these projects to identify, and quantify, the cost of such duplicative efforts.

Threat. The Services limited CROSSBOW's access to certain types of classified information. While we agree that stringent security measures were needed for some projects, we believe that CROSSBOW needed access to all threat simulator requirements, regardless of security classification, to ensure that the projects were being developed consistent with the most updated threat information.

Fund Control. The Program did not have centralized control over all simulator funds. Two efforts were made to centralize fund control at the OSD level. The first was the DoD Joint Authorization Act of 1989 that partially consolidated tri-Service and OSD simulator development funds into one budget line. The Services protested and sent paperwork associated with their projects to the Deputy Director. They did not want to be responsible for recordkeeping functions if they no longer controlled the funds. Neither EXCOM nor CROSSBOW were adequately staffed to do these recordkeeping functions, so the funds were redistributed to the Services. The second effort was in rechartering EXCOM and CROSSBOW. The revised charter gave CROSSBOW control over simulator development but stopped short of giving it control over the acquisition of already developed simulators.

Conclusion. We believe that the Deputy Director should charter a dedicated Joint Threat Simulator Program Office (Joint Program Office). The current management approach does not provide oversight of project development started before April 1989. All projects, both ongoing and planned, should be subject to Program management and oversight. A Joint Program Office, supported by representatives from each of the Services, would facilitate identification of individual Service simulator requirements, consolidation of requirements into joint development or procurement projects, and elimination of unnecessary duplication of efforts. We also believe that threat simulator funds should be consolidated in accordance with the DoD Joint Authorization Act of 1989 and that the Joint Program Office should control these consolidated funds. This would permit the Joint Program Office to control not only threat simulator

development, but also the acquisition of threat simulators to ensure the effective use of scarce resources. However, we believe that because of existing Service capabilities, budget execution and contracting functions for simulator funds should be decentralized and accomplished by the Services.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Deputy Director, Defense Research and Engineering (Test and Evaluation):

a. Charter a Joint Threat Simulator Program Office at the OSD level using the CROSSBOW-S management Office to provide review and oversight for all threat simulator requirements, developments, acquisitions, and upgrades including grandfathered projects initiated before April 1989.

b. In accordance with the DoD Joint Authorization Act of 1989, provide centralized control of funds for threat simulator development, acquisition, and upgrade regardless of security classification, with funding approval or disapproval authority at the Joint Threat Simulator Program Office, and require the Services to restrict the use of simulator funds to approved projects.

c. Provide decentralized budget execution and accounting for simulator funds at the Service level.

d. Require that the Joint Threat Simulator Program Office include adequate representation from each of the Services and have authority to draw on Service staff resources and expertise to support special projects.

e. Require the Services to coordinate all threat simulator requirements, regardless of security classification, with the Joint Threat Simulator Program Office to ensure that simulators are being developed consistent with the most updated threat information.

MANAGEMENT COMMENTS

The Deputy Director nonconcurred with $15.7 million of the $30.1 million of monetary benefits cited in the draft of this report, stating that two projects are completed and another has progressed to where modification and integration costs will offset envisioned savings. Also, the Deputy Director did not fully concur with the unspecified budget reductions, stating that the Navy did not apply a $1.2 million reduction to the TRES Development project but applied it to the Emitter Simulations project.

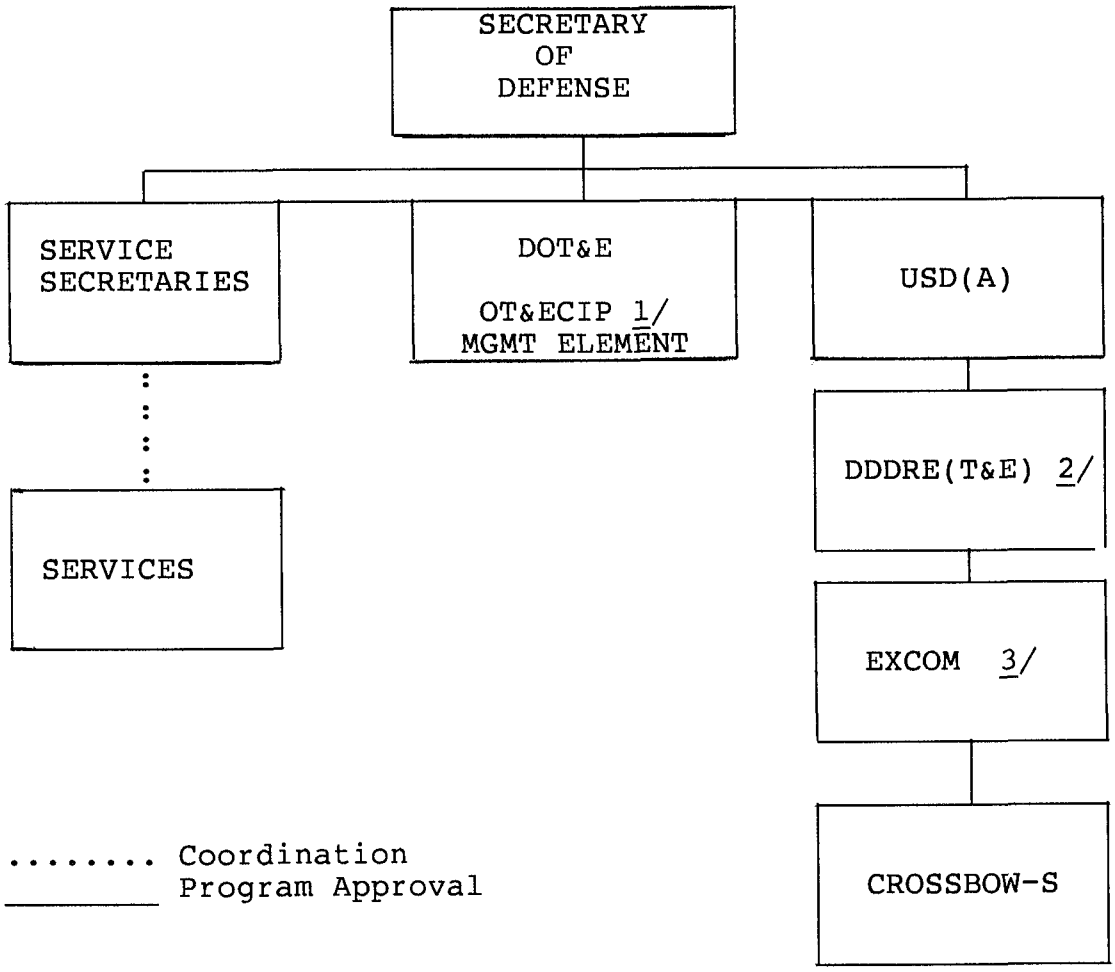
Recommendation a. The Deputy Director partially concurred with the recommendation stating that while he agreed with the concept of an independent Joint Threat Simulator Program Office, the constrained manpower, funding, and policy environment made it unlikely that it would be formally approved as an OSD field activity or could be adequately staffed in the near term. Instead, he proposed to redesignate the CROSSBOW-S Management Office as a Joint Threat Simulator Program Office under the cognizance of OSD with the Deputy Director as the designated tasking, funding, and rating authority. He also proposed to retain the CROSSBOW-S Committee to augment the Joint Threat Simulator Program Office staff.

Recommendations b., c., d., and e. The Deputy Director concurred with the recommendations stating that Threat Simulator Program funds will be consolidated at the OSD level in the FY 1992 President's Budget Submission, the Services will be required to execute and account for simulator budgets by October 1991 and the Joint Threat Simulator Office will include representatives from the Services and it will negotiate a Memorandum of Agreement with the Services for additional staff support for special projects by December 1990. The Deputy Director further stated that DoD Directive 5000.3-M-6 will be revised to require the Services to coordinate all simulator requirements, regardless of security classification or date of origin, with the Joint Threat Simulator Program Office by May 1991. The complete text of management's comments is in Appendix E.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

Recommendation a. We agree with the Deputy Director's proposal to redesignate the CROSSBOW-S Management Office as the Joint Threat Simulator Program Office and retain the CROSSBOW-S Committee. We believe these actions will achieve the control and provide the flexibility envisioned in our recommendation. Therefore, the recommendation is changed to delete the requirement to abolish the CROSSBOW-S Committee. We also agree with the Deputy Director's reasons for reducing potential monetary benefits and have revised our calculations accordingly. In addition, we revised the table on page 4 regarding unspecified budget reductions to indicate that the Navy's Emitter Simulations project absorbed the $1.2 million reduction rather than the TRES development project.

THREAT SIMULATOR ORGANIZATION



1/ OT&ECIP - Operational Test & Evaluation Capability Improvement Program
2/ DDDRE(T&E) - Deputy Director, Defense Research and Engineering (Test and Evaluation)
3/ EXCOM - Executive Committee on Threat Simulators

EXECUTIVE COMMITTEE ON THREAT SIMULATORS-MEMBERSHIP

DEPUTY DIRECTOR, DEFENSE RESEARCH
AND ENGINEERING (TEST & EVALUATION)

MEMBERS

ARMY:	OFFICE OF THE DEPUTY CHIEF OF STAFF, OPERATIONS	OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE, C3I ASSISTANT DIRECTOR FOR ELECTRONIC COMBAT
NAVY:	OFFICE OF THE CHIEF OF NAVAL OPERATIONS	OFFICE OF THE DEPUTY DIRECTOR, DEFENSE RESEARCH AND ENGINEERING (T&E), STRATEGIC AERONAUTICAL AND THEATER NUCLEAR SYSTEMS
AIR FORCE:	OFFICE OF THE SECRETARY OF THE AIR FORCE	DEFENSE INTELLIGENCE AGENCY, WEAPONS AND SYSTEMS DIVISION

CROSSBOW-S COMMITTEE CHAIRMAN

OBSERVERS

NATIONAL SECURITY AGENCY	CENTRAL INTELLIGENCE AGENCY
OFFICE OF DIRECTOR, OPERATIONAL TEST AND EVALUATION	JOINT STAFF

CROSSBOW-S MEMBERSHIP

CROSSBOW-S COMMITTEE CHAIRMAN

OFFICE	MEMBERS	ALTERNATES
ARMY:	OFFICE OF THE DEPUTY CHIEF OF STAFF, OPERATIONS	MISSILE AND SPACE INTELLIGENCE CENTER
NAVY:	NAVAL AIR SYSTEMS COMMAND	NAVAL AIR SYSTEMS COMMAND
AIR FORCE:	OFFICE OF THE SECRETARY OF THE AIR FORCE	ARMAMENTS DIVISION
DEFENSE INTELLIGENCE AGENCY:	WEAPONS AND SYSTEMS DIVISION	

OBSERVERS

EXCOM EXECUTIVE SECRETARY	CENTRAL INTELLIGENCE AGENCY
OFFICE OF THE DIRECTOR, OPERATIONAL TEST AND EVALUATION	NATIONAL SECURITY AGENCY

JOINT STAFF

SCHEDULE OF COST AVOIDANCES RESULTING FROM NONRECURRING ENGINEERING COSTS FY 1989 - FY 1994
($ IN MILLIONS)

SERVICE NOMENCLATURE	DUPLICATIVE ENGINEERING COSTS
RSAM MISSILE B	.7
MEG	2.8
IRLE	2.7
AEG/PEG/COMMEG	.2
RSAM	4.0
HAVE COPPER	4.0
TOTAL	$14.4

As a result of the Director's comments, we excluded the following projects from our estimate of savings (included in the draft of this report) because REDFOX and TWS-10 are completed and Have Pewter has progressed to where modification and integration costs off set envisioned savings.

REDFOX	$ 2.3
TWS-10	2.4
HAVE PEWTER	11.0
TOTAL	$15.7

(T&E)

OFFICE OF THE DIRECTOR OF
DEFENSE RESEARCH AND ENGINEERING

WASHINGTON, DC 20301

MAY 14, 1990

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT DIRECTORATE, OFFICE OF THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Draft Report on the Audit of the DoD Management of Threat Simulators (Project No. 9AB-0057)

Attached are my comments on the subject audit. In formulating this response comments from the Services were solicited and considered.

Please convey my appreciation to the audit staff for their constructive approach and professional competence.

Charles E. Adolph
Deputy Director
Defense Research and Engineering
(Test and Evaluation)

Attachment

CF:
EXCOM Members and Observers

DoD IG DRAFT REPORT - APRIL 6, 1990
DoD IG PROJECT NUMBER 9AB-0057

"AUDIT OF THE DoD MANAGEMENT OF THREAT SIMULATORS"

DEPUTY DIRECTOR, DEFENSE RESEARCH AND ENGINEERING (TEST AND EVALUATION) COMMENTS

* * * * *

FINDING

Final Report Page No.

OSD did not provide adequate centralized Threat Simulator Program (the Program) control to ensure a coordinated, joint-Service approach to simulator development, acquisition and upgrade. This occurred because OSD managed the Program through committees that lacked the independence, Service support, and internal controls needed to effectively and efficiently manage the Program. As a result, the Services developed individual approaches to simulator development that increased Program costs by $75 million with a projected $30.1 million increase for duplicative engineering costs between FY 1990 and FY 1994.

DDDRE(T&E) Response: Partially concur. We concur in principle with the first two sentences of the finding. However, the distribution of unspecified budget reductions cited in the detailed discussion (P. 8, Service Support) and the estimate of projected increased costs (i.e., cost avoidances)(P. 11, Procurement Practices: $30.1 million) were not fully concurred with. 4 6

With regard to the discussion concerning distribution of unspecified budget reductions, the Navy did not apply any of the $5.6 million unspecified budget reduction to TRES which is funded in the OPN appropriation; the $1.2 million was applied to the Emitter Simulations project. The GAR and I-15 Upgrade developments experienced slippage in FY90 which permitted absorption of the decrements. Both projects have been restructured and are continuing on revised schedules.

We non-concur with $15.7 million of the $30.1 million avoidable duplicative engineering costs (cost avoidances) detailed in the discussion of procurement practices and Appendix E.

- REDFOX and TWS-10 are completed projects; therefore no cost avoidances are possible.

- The HAVE PEWTER system will have to be modified. If the I-15 signal processor is used, there will be an additional cost to modify the HAVE PEWTER architecture. If an alternative generic signal processor is used there will be development costs but limited architecture modifications. In addition, the final product will have generic capability. The Air Force plans to compete the alternatives and select the most cost-effective solution. Cost avoidance, if any, will be insignificant.

- In addition, although cost avoidances are possible, RSAM is a reconfigurable system which will provide significant (offsetting) cost savings and flexibility by simulating three threats with essentially the same hardware.

RECOMMENDATIONS

RECOMMENDATION A: Abolish the CROSSBOW-S committee and charter a Joint Threat Simulator Program Office at the OSD level using the CROSSBOW-S Management Office to provide review and oversight for all threat simulator requirements, developments, acquisitions, and upgrades including grandfathered projects initiated before April 1989. (P. 15, Draft DoD IG Report.)

Deleted from final report

DDDRE(T&E) RESPONSE: Partially concur.

Although we agree in principle with the concept of an independent Joint Threat Simulator Program Office (JTSPO), the constrained manpower, funding, and policy environment makes it unlikely that it would be formally approved as an OSD field activity or could be adequately staffed (with OSD spaces and Service personnel) in the near term. Therefore, it will be necessary to continue to rely on the CROSSBOW-S Committee to serve as the focal point for coordination with the Services and to perform functions such as collecting Service requirements and consolidating them into joint development or procurement projects; recommending development priorities; providing inter- and intra-Service coordination, and recommending priorities and solutions to technical and project execution problems. The CROSSBOW-S Charter will be revised as necessary to reflect this role (S: June 1991).

In order to enhance the flexibility and authority of the DDDRE(T&E), and to achieve some of the advantages of a program office independent of influence by a particular Service, the CROSSBOW-S Management Office will be redesignated as the Joint Threat Simulator Program Office (JTSPO), and chartered (S: September 1990) to assist the DDDRE(T&E) by assuming responsibility for some functions which are currently performed by the CROSSBOW-S Committee or the Services. Specifically, the JTSPO will: formulate and coordinate a joint plan, program and budget for DDDRE(T&E) approval; recommend lead development and acquisition activities and coordinate their activities; distribute RDTE and procurement funds as directed by the DDDRE(T&E); and monitor project technical progress and budget execution by the Services. In addition, the JTSPO will continue to provide administrative support to the EXCOM and CROSSBOW-S Committee and conduct or coordinate preliminary investigations (e.g., ITEAMS, workshops, threat technical research, etc) and selected development projects of joint interest. The charter will specify that the JTSPO has oversight over all threat simulator developments, regardless of security classification or origination date. Greater independence from the Army will be achieved by means of an MOA (S: December 1990) between DDDRE(T&E) and Army Intelligence Agency/Missile and Space Intelligence Center which will recognize the DDDRE(T&E) as the tasking, funding, and rating authority for the JTSPO.

RECOMMENDATION B: In accordance with the DoD Joint Authorization Act of 1989, provide centralized control of funds for threat simulator development, acquisition, and upgrade, regardless of security classification, with funding approval or disapproval authority at the Joint Threat Simulator Program Office, and require the Services to

restrict the use of simulators funds to approved projects. (P. 15, Draft DoD IG Report.) 8

DDDRE(T&E) RESPONSE: Concur. The draft Test and Evaluation Activity Consolidation Study, submitted to the Deputy Secretary of Defense for consideration, recommends that threat simulator RDTE and procurement funds be centrally programmed, budgeted, and controlled by OSD. Our objective is to reflect the consolidation in the FY 1992 President's Budget Submission (January 1991). The DDDRE(T&E) will revise DoDD 5000.3-M-6 (S: May 1991) to reserve to himself authority to formulate and approve threat simulator programs and budgets, distribute funds, and monitor project and budget execution. He will be advised and assisted by the JTSPO, the EXCOM, and the CROSSBOW-S Committee.

RECOMMENDATION C: Provide decentralized budget execution and accounting for simulator funds at the Service level. (P. 15, Draft DoD IG Report.) 8

DDDRE(T&E) RESPONSE: Concur. Commencing with the FY 1992 Appropriation, the DDDRE(T&E) will distribute funds for simulator development and procurement to the assigned lead Service. The lead Service will be required to execute the project and account for project funds. Implementation of this recommendation is contingent upon consolidation of funding (Recommendation B).

RECOMMENDATION D: Require that the Joint Threat Simulator Program Office include adequate representation from each of the Services and have authority to draw on Service staff resources and expertise to support special projects. (P. 16, Draft DoD IG Report.) 8

DDDRE(T&E) RESPONSE: Concur. The JTSPO will submit manpower requirements documents through appropriate channels by September 1, 1990 (or 90 days following approval of the Charter, whichever is later). However, the current resource environment makes it unlikely that this request will be approved in the near term. The JTSPO Charter will include a provision which permits the JTSPO Director to negotiate MOA with the Services for additional staff resources and expertise to support special projects.

RECOMMENDATION E: Require the Services to coordinate all threat simulator requirements, regardless of security classification, with the Joint Threat Simulator Program Office to ensure that simulators are being developed consistent with the most updated threat information. (P. 16, Draft DoD IG Report.) 8

DDDRE(T&E) RESPONSE: Concur. Appropriate safeguards to require the Services to coordinate requirements, regardless of security classification, with the JTSPO will be incorporated into the revision of DoDD 5000.3-M-6 and the JTSPO charter.

MILESTONES

EVENT	DATE
Joint Threat Simulator Program Office Charter Approved	September 1, 1990
Memorandum of Agreement between DDDRE(T&E) and AIA/MSIC Approved	December 1, 1990
Manpower Requirements Documents for Service Personnel in JTSPO Submitted	December 1, 1990
Submission to Congress of FY 1992 Consolidated Threat Simulator Budget Proposal	January, 1991
Publication of Revised DoDD 5000.3-M-6 and Threat Simulator Acquisition Procedures	May 1991
Revised Charter for CROSSBOW-S Committee Approved	June 1991
Congress Appropriates 1991 Funds for Consolidated Threat Simulator Program	October 1991
Central Management of Funds Commence	October 1991

SUMMARY OF POTENTIAL MONETARY AND OTHER BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefits	Fiscal Year	Benefit Type	Benefit Amount
a.	Internal control - Charter a Joint Threat Simulator Program Office to provide centralized Program oversight and management.	1990/ 1994	One-time Cost Avoidance	**$14.4**
b.	Internal control - provide centralized fund control and restrict the use of funds to approved simulator projects.		Nonmonetary	$ 0
c.	Internal control - provide decentralized budget execution and accounting.		Nonmonetary	$ 0
d.	Internal control - Joint Threat Simulator Program Office include representatives from each of the Services and to be adequately staffed to accomplish its stated mission.		Nonmonetary	$ 0
e.	Internal control - require Services to coordinate simulator requirements including those at contractor facilities with the Joint Threat Simulator Program Office.		Nonmonetary	$ 0
	Total Cost Avoidances (in millions)			$14.4

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition
Deputy Director Defense Research and Engineering (Test and Evaluation), Washington, DC
Assistant Secretary of Defense, Command, Control, Communications and Intelligence, Washington, DC
Joint Electronic Warfare Center, San Antonio, TX

Department of the Army

Headquarters, U.S. Army Chief of Staff, Washington, DC
U.S. Army Missile and Space Intelligence Center, Redstone Arsenal, Huntsville, AL
Fort Bliss, TX
Army Intelligence Agency, Washington, DC

Department of the Navy

Naval Air Systems Command, Washington, DC
Naval Air Test Center, Patuxent River, MD
Fallon NAS, Reno, NV
Naval Weapons Center, China Lake, CA
Naval Research Laboratory, Washington, DC

Department of the Air Force

Secretary of the Air Force, Washington, DC
Utah Test and Training Range, Salt Lake City, UT
Wright Patterson Air Force Base, Dayton, OH
Nellis AFB, Las Vegas, NV
Air Force Electronic Warfare Evaluation Simulator, Fort Worth, TX
Eglin Air Force Base, Fort Walton Beach, FL

Other Non-DoD Activities

Russ Porter & Associates, Annapolis, MD
Calspan Corporation, Buffalo, NY

AUDIT TEAM MEMBERS

David A. Brinkman, Director, Acquisition Management Directorate
Raymond A. Spencer, Program Director
J. Steven Hughes, Project Manager
Addie M. Beima, Team Leader
Jenniffer Wilson, Auditor

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Deputy Director, Defense Research and Engineering
  (Test and Evaluation)
Director, Operational Test and Evaluation

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management)
U.S. Army (DAIG-PA)
U.S. Army Missile and Space Intelligence Center
U.S. Army Chief of Staff
U.S. Army Audit Agency

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Naval Air Systems Command

Department of the Air Force

Secretary of the Air Force
Comptroller of the Air Force

Defense Activities

Director, Defense Intelligence Agency

Non-DoD

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

Congressional Committee:

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Senate Ranking Minority Member, Committee on Armed Services
House Subcommittee on Defense, Committee on Appropriations
House Ranking Minority Member, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
House Subcommittee on Legislation and National Security,
  Committee on Government Operations