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DEPARTMENT OF DEFENSE

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AUDIT REPORT

WARGAMING ACTIVITIES IN
THE DEPARTMENT OF DEFENSE

No. 89-057

March 14, 1989

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INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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March 14, 1989

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (FORCE MANAGEMENT
AND PERSONNEL)
COMMANDER IN CHIEF, U.S. EUROPEAN COMMAND
ASSISTANT SECRETARY OF THE ARMY (FINANCIAL
MANAGEMENT)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT)
COMPTROLLER OF THE AIR FORCE
DIRECTOR, JOINT STAFF

SUBJECT: Audit Report on Wargaming Activities in the Department
of Defense (Report No. 89-057)

This is our final report on the audit of Wargaming Activities in DoD. The audit was made from April 1987 through February 1988. The overall audit objectives were to evaluate the adequacy of management policy and procedures for validating the objectives of wargaming activities in DoD. We also planned to evaluate the adequacy of management controls to prevent the duplication of wargaming efforts and the usefulness of wargaming to DoD managers in the decisionmaking process. In addition, we evaluated the internal controls applicable to our audit objectives. During the audit, we focused on DoD educational and training components that had a combined budget of about \$60 million for FY 1987, and \$510 million for FY 1988 through FY 1992.

We limited the scope of our audit to selected DoD Components whose primary missions were education and training. Therefore, we did not determine the usefulness of wargaming to DoD managers in the decisionmaking process. However, the audit showed that Department of Defense Service schools, colleges, and training centers had expanded or planned to expand wargaming capabilities by purchasing computer systems, developing modeling and data base software, and constructing facilities without clear objectives and guidance on joint wargaming activities. Also, plans by the Warrior Preparation Center to operate and expand computer facilities in support of wargaming for NATO were difficult to justify in view of current operations or future workload. Discontinuing certain wargaming activities could save about \$62 million. The results of the audit are summarized in the following paragraphs, and the details, recommendations, management comments, and audit responses are in Part II of this report.

Because OSD and the Joint Staff lacked policies and guidance on wargaming activities, the Space and Naval Warfare Systems

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Command, the Air Force Wargaming Center, and the Joint Warfare Center had programmed \$116 million for expansions of joint wargaming capabilities without coordinating those efforts with the other Services. Funds programmed were \$43 million for the Space and Naval Warfare Systems Command, \$51 million for the Air Force Wargaming Center, and \$22 million for the Joint Warfare Center. However, the expansion of capabilities at schools was unwarranted because they assumed that war plans were releasable to them, but Joint Chiefs of Staff policy precludes the schools' use of war plans. Also, the wargaming activities at certain centers duplicated those of other DoD Components. We recommended that OSD and the Joint Staff establish policies and procedures for joint wargaming activities (computer simulations, modeling, and exercises) to define wargaming and clarify missions and responsibilities of the DoD colleges, schools, and training centers participating in wargaming activities. Also, we recommended that the Chairman, Joint Chiefs of Staff initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue funding for operations of the Joint Warfare Center (\$22 million) because its functions were duplicated elsewhere. In addition, we recommended that the Deputy Chief of Naval Operations for Naval Warfare direct the Naval War College to request a waiver from the Joint Staff to allow the development, testing, and analysis of operational war plans and contingency plans, and stop constructing special storage facilities (Sensitive Compartmented Information Facilities) at Naval schools, colleges, and training centers when wargaming activities are limited to education and training. Further, we recommended that the Air Force Deputy Chief of Staff for Plans and Operations develop joint program management plans, establish memorandums of agreement, and implement operating procedures to effectively manage wargaming activities of the Air Force Wargaming Center (page 3).

The Warrior Preparation Center's plans to expand facilities for wargaming activities involving NATO nations could not be supported based on current operations or future workload. As a result, further expansion at the center should be discontinued to avoid spending \$40 million unnecessarily to build facilities, purchase computer systems, and develop computer models and data bases, and on other operations associated with wargaming. We recommended that the Commander in Chief, U.S. European Command direct the Warrior Preparation Center to prepare an updated management plan specifying wargaming objectives, implement standard operating procedures, and prepare a memorandum of understanding with the Supreme Allied Commander, Europe that ensures reimbursement to the Center by NATO nations participating in wargaming exercises there. We also recommended that the Commander in Chief, U.S. European Command initiate actions with the Assistant Secretary of the Army for Financial Management and

the Comptroller of the Air Force to discontinue the funding required to expand facilities at the Warrior Preparation Center (\$40 million). In addition, we recommended that the Commander in Chief, U.S. European Command prepare and staff a decision paper for the Secretary of Defense to coordinate the appropriate command structure for the Warrior Preparation Center (page 17).

The recommendations in this report address internal control deficiencies as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. The internal control deficiencies stem from the absence of OSD and Joint Staff guidance and policy for DoD wargaming activities. Specifically, OSD and the Joint Staff need to coordinate systems acquisitions, systems developments, and expansions of joint wargaming activities. Recommendations A.1. and A.2.a., when implemented, will correct these deficiencies. The senior officers responsible for internal controls within the OSD and the Joint Staff will be provided a copy of this final report. Internal controls were adequate except for those previously discussed.

A draft of this report was provided to the addressees for comment on July 22, 1988. Comments were received from: the Assistant Secretary of Defense (Force Management and Personnel) on October 6, 1988; the Vice Director, Joint Staff on October 25, 1988; the U.S. Commander in Chief, European Command on September 26, 1988; the Deputy Under Secretary of the Army (Operations Research) on November 2, 1988; the Assistant Secretary of the Navy (Manpower and Reserve Affairs) on October 13, 1988; and the Acting Assistant Secretary of the Air Force (Readiness Support) on September 28, 1988. Appendixes C through H contain complete texts of management comments. We considered all management comments in preparing the final report and made appropriate revisions.

The Assistant Secretary of Defense (Force Management and Personnel) nonconcurred with Recommendation A.1. in our draft report, which addressed designating an office of primary responsibility in the Office of the Secretary of Defense to establish policies and procedures on wargaming and to provide oversight and coordination for the acquisition of facilities, computer systems, computer models and data bases used in wargaming. The Assistant Secretary stated that the Chairman, Joint Chiefs of Staff is responsible for policy on coordinating joint training, and because of a correlation of this responsibility to wargaming, the Joint Staff would have a more appropriate office for oversight and management of wargaming activities. Also, he informed us that the Joint Staff had initiated a plan for directing and controlling wargaming activities in DoD that included establishing a Joint Executive Council which would have a participating member from the Office of the Assistant Secretary of Defense (Force

Management and Personnel). We agree with the alternative action to have the Assistant Secretary participate on a Joint Executive Council that would establish policies on wargaming. We have revised the recommendation to reflect the Joint Staff's alternative action. We request that the Assistant Secretary of Defense (Force Management and Personnel) provide comments on the revised Recommendation A.1.

The Vice Director, Joint Staff provided comments that did not comply with DoD Directive 7650.3, regarding responses to audit reports because specific recommendations and dollar savings were not addressed, and dates for corrective actions were not given. The Vice Director, Joint Staff generally supported designating an office in the Joint Staff to establish policies on coordinating wargaming and the development of computer systems and models. The Joint Staff also disagreed with discontinuing the operations and funding of the Joint Warfare Center and said that the Center made significant contributions by saving money in networking current computer models. Further, the Joint Staff commented that the Center was also the only organization in DoD with the mission to provide support for joint training to all the commanders in chief and the Joint Chiefs of Staff. We disagree with the Vice Director, Joint Staff that continuing the operations and funding of the Joint Warfare Center is justified. The Center could produce only limited documentation to substantiate its mission and operations. It was also understaffed. The Center has been operating under a draft charter since 1987, and its mission and operations were nebulous. Accordingly, we request that the Joint Staff reevaluate its position and provide revised comments in their response to the final report.

The Commander in Chief, U.S. European Command concurred in part with Recommendation B.1. to prepare an updated management plan that would contain a 5-year development plan for the Warrior Preparation Center. He stated that contrary to what was stated in the draft report, a management plan existed, but it had not been updated since it was published. Our review of the management plan, provided by the Air Force subsequent to our audit, showed that it should be updated. We have revised our recommendation accordingly and request that the Commander in Chief, U.S. European Command provide revised comments in response to the final report.

The Commander in Chief, U.S. European Command nonconcurred with Recommendation B.2. to discontinue the \$40 million in funding for the expansion of computer facilities at the Warrior Preparation Center. While he continued to affirm the need for the expansion, he stated the Center's budget had been reduced by \$34.1 million for FY 1989 through FY 1992. This budget reduction satisfies the intent of our recommendation. It appears that the

difference between our estimated savings (\$40 million) and management's (\$34.1 million) represents the FY 1988 funding for construction of a building at the Center. Therefore, we request that the management comments to the final report inform us of any savings that may be recoverable from the construction of that building.

The Commander in Chief, U.S. European Command, concurred with Recommendation B.3. to staff a paper with the Secretary of Defense outlining the appropriate organization and responsibilities of the U.S. Army, Europe, the U.S. Naval Forces, Europe, and the U.S. Air Forces in Europe at the Warrior Preparation Center. The Commander in Chief, U.S. European Command, concurred in principle with Recommendation B.4. addressing the need to ensure reimbursement to the U.S. Government by North Atlantic Treaty Organization nations participating in wargaming exercises at the Warrior Preparation Center. The Commander in Chief believed an acceptable interim solution would be an informal arrangement that provides for service-in-kind through reciprocal use of allied training sites and facilities. We agree with the Commander in Chief; however, his management comments did not address specific actions to be taken to execute a formal memorandum of understanding with the Supreme Allied Commander, Europe. That agreement executed on behalf of allied countries in the North Atlantic Treaty Organization should establish a commitment by those countries to participate in exercises at the Center, and should also establish an obligation to reimburse the U.S. Government for services provided there. Accordingly, we request that the Commander in Chief provide additional comments to the final report concerning Recommendation B.4., on the actions taken or planned to execute a memorandum of understanding.

While we addressed no recommendations in the draft report to the Army, the Deputy Under Secretary of the Army (Operations Research) also provided comments on operations of the Joint Warfare Center. The Army's comments further illustrate that the objectives, policies, procedures, and practices of wargaming activities in DoD need to be clarified. The confusion created by this lack of clear direction for wargaming activities affects the decisions made in allocating resources and also causes redundancy and overlap in the missions of these activities. In Army's case, the Deputy Under Secretary believed that other DoD activities could not realistically assume the Center's missions based on the amount of curriculum time the Army invests on student wargaming activities. We disagree with the Army's comments because the Center's charter was undefined and indications were that students would not be trained there. We also found that the Center was not staffed with enough personnel to accomplish the tasks the Army described.


The Assistant Secretary of the Navy (Manpower and Reserve Affairs) nonconcurred with Recommendations A.3.a. and A.3.b. Concerning Recommendation A.3.a., the Navy stated that its wargaming centers did not utilize war plans and contingency plans for education purposes. However, the Navy commented that its educational schools and training centers supported other Naval Commands that analyzed war plans and contingency plans. The activity at the Naval War College that supports those commands was a part of the College, and personnel would have access to war plans and contingency plans. In this regard, the current Joint Chiefs of Staff policy makes no specific exemption for releasing war plans and contingency plans to Service colleges or schools without an appropriate waiver, even in a support role. With respect to Recommendation A.3.b., the Navy stated that the Sensitive Compartmented Information Facilities of the Naval War College and the Tactical Training Groups supported curriculum courses. However, we believe that the Sensitive Compartmented Information Facility was built not to support curriculum courses, but for an intelligence detachment at the Naval War College. That detachment supported wargaming research at the College and war games by other Naval Commands. Unless the Joint Chiefs of Staff grant a waiver to current policy, operational war plans and contingency plans cannot be used at the school and the facility is unjustified. Accordingly, we request that the Navy reconsider its position and provide revised comments on Recommendations A.3.a. and A.3.b. to the final report.

The Acting Assistant Secretary of the Air Force (Readiness Support) nonconcurred with Recommendations A.4.a. and A.4.b. Concerning Recommendation A.4.a., the Acting Assistant Secretary stated that funding for Phase II and Phase III of the Command Readiness Exercise System development was removed from the Five-Year Defense Plan, and any efforts to continue this development will be coordinated with other Services' programs. We consider the Air Force's actions to be responsive. However, the Air Force made no specific comments on the need to prepare memorandums of agreement and joint management plans. We believe that the Air Force's plans to continue development of the Command Readiness Exercise System for a joint wargaming capability should include formal agreements and plans with participating Services and other DoD activities. With regard to Recommendation A.4.b., the Air Force stated that operational plans can be used for the wargaming mission of the Air Force Wargaming Center. The Air Force said that the Joint Chiefs of Staff policy applies only to professional military education, and, in this mission area, the Center does not use operational data. We disagree with the Air Force's position. The Center is part of the Air University, and the Joint Chiefs of Staff policy on the releasability of war plans to Service colleges or schools does not include exemptions based on the mission requirements of the school or college. Accordingly,

we request that the Air Force reconsider its position and provide revised comments to Recommendations A.4.a. and A.4.b. in responding to the final report.

DoD Directive 7650.3 requires that all recommendations be resolved within 6 months of the date of the final report. In order to comply with this Directive, we request that all addressees provide us with a final position on the recommendations addressed to them within 60 days of the date of this report. These comments should indicate concurrence or nonconcurrence with the findings, potential monetary benefits, and each of the recommendations as applicable. For those recommendations concurred with, describe the actions taken or planned, completion dates of actions already taken, and estimated dates of planned actions. If appropriate, please describe alternative actions proposed to achieve the desired improvements. For all nonconcurrences, please state the specific reasons for the position taken. In order for your comments to be considered responsive, you must state concurrence or nonconcurrence with the estimated \$22 million and \$40 million in cost avoidances identified in Appendix I of this report. If you nonconcur with the estimated savings or any part thereof, you must state the amount you nonconcur with and the basis for your nonconcurrence. Potential monetary benefits are subject to resolution in the event of nonconcurrence or failure to comment.

The courtesies extended to the staff during the audit are greatly appreciated. Copies of the final report will be distributed to the activities listed in Appendix K. If you wish to discuss this final report, please contact Mr. Alvin L. Madison, Program Director, at (202) 693-0163 or Mr. Tilghman A. Schraden, Project Manager, at (202) 693-0164.


Stephen A. Trodden
Assistant Inspector General
for Auditing

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

WARGAMING ACTIVITIES
IN THE DEPARTMENT OF DEFENSE

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Prepared by:
Intelligence, Communications and
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Project No. 7IN-514

WARGAMING ACTIVITIES
IN THE DEPARTMENT OF DEFENSE

PART I - INTRODUCTION

Background

DoD Components develop war games to satisfy a variety of objectives. These objectives include training and educating military officers; preparing and refining war plans; evaluating new weapon systems during research and development; analyzing military strategies and war doctrine and tactics; and determining personnel and logistic requirements. Our audit addressed education and training, not the other objectives. War games use operations research techniques such as computer models. A computer model is a mathematical representation of a quantitative or qualitative state that depicts something that exists or could exist in the real world. That is, a model could be used to portray scenarios that use data bases depicting U.S., enemy, and friendly forces (for example, a naval battle or a single aircraft carrier).

In addition, information systems technology, along with computers, is used in various ways to conduct war games. For example, complex models and simulations use audiovisual or graphic displays to enhance the learning process. In the Department of Defense, war games vary in size and scope depending on the objectives to be achieved, the scenarios being portrayed, the organizations involved, and the sophistication of the players participating. A war game can be a one-on-one air, land, or sea engagement, a regional battle, a theater-level war, or a world-wide conventional or nuclear conflict. Likewise, players can participate one-to-one, or many players can participate from a theater representing all levels of command.

The audit focused on selected DoD Components (schools, colleges, and training centers) which had analytical applications for war games but used war games primarily for educational and training purposes. Conceptually, the Army, Navy, and Air Force believed the value of joint wargaming stemmed from its potential as an analytical, educational and training tool. However, the Navy and the Air Force believed that analytical applications of joint wargaming would evolve from their schools. Although the Army participated in joint wargaming activities with the Navy and Air Force, the Army had no plans to expand capabilities at its school for other than educational purposes; therefore, we excluded it. In contrast, the Navy and Air Force were in the process of expanding wargaming capabilities at their Service schools.

Objectives and Scope

The overall objectives of the audit were to evaluate the adequacy of the management policy and procedures for validating the objectives of wargaming activities in the Department of Defense. We also planned to evaluate the adequacy of management controls to prevent the duplication of wargaming efforts and the usefulness of wargaming to DoD managers in the decisionmaking process. Because we limited the audit to selected DoD Components whose primary missions were education and training, our audit focused on the Service colleges, schools, and training centers that are involved in wargaming activities. Consequently, we did not address the usefulness of wargaming data to DoD managers in the decisionmaking process. We visited the three Military Department colleges, the National Defense University, and seven wargaming centers and support activities. These DoD Components had a wargaming budget of about \$60 million for FY 1987 and had programmed \$510 million for operations from FY 1988 through FY 1992. Activities contacted during the audit are listed in Appendix J.

During the audit, we interviewed personnel from the Office of the Secretary of Defense (OSD), the Joint Staff, the Army and Navy War Colleges, the Air University, the National Defense University, and seven other wargaming centers and support activities. We reviewed documents dated from May 1982 through November 1987 related to wargaming missions, the acquisition of computer hardware and software, and the construction and renovation of wargaming facilities. We analyzed management reports, budget submissions, and after-action reports on war games. We also reviewed management plans and schedules related to current and future wargaming activities provided by the Joint Chiefs of Staff and the Air Force in November 1988. In addition, we reviewed internal controls for the management of wargaming activities in DoD. This economy and efficiency audit was made from April 1987 through February 1988 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD.

Prior Audit Coverage

Within the last 5 years, there have been no audits of wargaming activities that covered the specific issues discussed in this report.

PART II - FINDINGS AND RECOMMENDATIONS

A. Management of Wargaming Activities

FINDING

DoD Components were expanding joint wargaming capabilities by purchasing computer equipment, by developing modeling and data base software, and by constructing or renovating facilities without clear objectives or policies from OSD for joint wargaming activities. Neither OSD nor the Joint Staff has established offices of primary responsibility to oversee wargaming activities and to coordinate operations of Service schools, colleges, and training centers involved in wargaming. As a result, the Space and Naval Warfare Systems Command had programmed \$43 million to maintain and expand computer systems without adequate consideration of the Joint Staff policies affecting war plans and contingency plans, the need for special facilities, and joint wargaming capabilities with other DoD activities. Also, the Air Force Wargaming Center had spent about \$38 million, and planned to spend an additional \$51 million, to acquire and operate computer systems and facilities that had limited usefulness for joint wargaming activities. In addition, the Joint Warfare Center planned to spend \$22 million on wargaming facilities and operations that could duplicate existing capabilities at other DoD activities.

DISCUSSION OF DETAILS

Background. Service schools, colleges, and training centers use wargaming in their academic curriculums or training programs to educate or train military officers. Also, several of these DoD educational facilities serve as the central activity of their Services or major commands to plan and conduct war games for developing strategy, tactics, and doctrine for the war planning process. Most of these Service schools, colleges, and training centers have evolved independently without central direction and policy, and have developed wargaming components -- including game objectives, computer models, computer equipment and systems, and data bases -- to satisfy the unique missions and objectives of their particular Service and command affiliation. Thus, managers of Service schools, colleges, and training centers have different perceptions of wargaming methodology and its applications.

Management and organizational structures for wargaming have reached different stages of development and vary widely throughout DoD. This has occurred because no criteria were established at the outset of wargaming to evaluate organizational structures, associated system developments, and wargaming missions to ensure coordinated evolution. Therefore, the

organizations that have evolved in OSD and the Military Departments appear to have duplicate, overlapping, or undefined objectives and missions related to wargaming. In the absence of established criteria to evaluate DoD wargaming missions and performance, we used sound business and management practices to evaluate transactions and activities. These practices require published documents that establish management policies, responsibilities, reporting requirements, and clear operational concepts and procedures for wargaming activities.

Historically, all three of the Military Departments have been involved in most global conflicts affecting the United States, and their joint participation in war games would be beneficial. Joint participation in wargaming activities by all of the Services is a desirable long-term goal in DoD, but will be difficult to achieve because of diverse wargaming systems, organizations, and operating requirements, and the absence of clear OSD guidance. Appendix A gives details on those OSD and LoD Components involved in wargaming activities within DoD, with pertinent information about their operations. Appendix B defines the terms, organizations, systems, and military operations associated with wargaming.

Service Schools, Military Colleges, and Training Centers. Wargaming capabilities have evolved and grown, and the schools, colleges, and training centers may support more than one Service. These factors have led to unclear DoD policy, procedures, and concepts in most aspects of wargaming. The schools lack uniform terminology for wargaming, and their objectives for conducting war games are inconsistent. Consequently, the Service schools, colleges, and training centers develop unique wargaming capabilities, which include requirements for constructing and renovating facilities and acquiring computer systems and wargaming models. Expanding wargaming capabilities at these educational schools and training centers was not plausible in view of other DoD policies and objectives. In addition, we found that wargaming missions and functions at schools and centers overlapped and duplicated each other.

Neither the Joint Staff nor OSD had established clear policies on wargaming to ensure that computer wargaming models and systems were coordinated during their development. Guidance was also needed to preclude unnecessary construction and improvements to wargaming facilities and capabilities. Overall, within DoD, it was difficult to see or understand the direction wargaming was taking without clearly stated policies, guidance, and specific long-term objectives. However, in this environment, Service schools, colleges, and training centers involved in wargaming activities planned to spend \$510 million through FY 1992 on facilities, computer systems, and computer model developments.

This continued development of wargaming capabilities, with only ad hoc coordination between Service schools, colleges, and training centers, led to unnecessary proliferation of facilities, computer systems, and computer models.

Oversight. Neither OSD nor the Joint Staff had established an office of primary responsibility for overseeing wargaming activities in DoD. OSD supports some aspects of wargaming, but is not directly involved with setting policies or procedures on wargaming for other DoD Components. The Office of the Director for Program Analysis and Evaluation, OSD, was developing computer models that had analytical applications for war games. However, this office did not work with or control Service schools, colleges, or training centers, which were also developing or using similar computer models and simulations. Also, the Office of the Assistant Secretary of Defense for Force Management and Personnel provided policy and direction to the Training and Performance Data Center at Orlando, Florida. The Training and Performance Data Center acted as a repository for information on computer models and simulations that were prepared for training purposes. Participation in the Training and Performance Data Center was the only affiliation that we could find by the Office of the Assistant Secretary of Defense (OASD) for Force Management and Personnel in wargaming activities, and the OASD played only a minor role.

Two Directorates within the Joint Staff, the Directorate for Operational Plans and Interoperability and the Directorate for Force Structure, Resource, and Assessment, participated in some aspects of wargaming support. However, neither office had DoD-wide oversight responsibilities for wargaming activities, although the new Directorate for Operational Plans and Interoperability did gain direct control over the Joint Warfare Center in FY 1987.

Our analyses of existing guidance at the Service schools, colleges, and training centers showed a wide diversity in the procedures and practices used for wargaming. The Navy had issued guidance in 1985 that established the Naval War College as the central activity for wargaming within the Navy. The Naval War College and other activities such as the Tactical Training Group, Atlantic were also implementing standard operating procedures on the development and participation of Naval commands in war games. The Navy seemed to be the pioneer in developing procedures and practices for educational wargaming activities.

The Air Force established an organizational structure in 1984 to focus the funding and policy for wargaming activities as described in Appendix A. However, Air Force management had not issued any policies on wargaming since that organizational

structure was formed. The Army and the other Service schools, colleges, and training centers had no specific organizational structure or guidance on wargaming as a distinct mission objective. But these activities often used the term "wargaming" to illustrate a method or tool for accomplishing other mission objectives, such as education, training, exercises, planning, or research work in military doctrine and tactics.

Further, the wargaming organizations included in our audit had no OSD policy guidance on joint or inter-Service wargaming. We found that joint war games were conducted on a game-by-game basis, and the organizations participating may or may not have executed memorandums of understanding. Therefore, no firm basis existed to evaluate the need for developing new wargaming capabilities, such as renovation and construction of facilities and the acquiring of new computer systems for wargaming activities.

OSD and the Joint Staff needed to formulate and establish policy guidance on the use of wargaming by Service schools, colleges, and training centers to support education, training, operational war planning, and research on strategy, concepts, tactics, and doctrine for warfighting. This would add a sense of direction and provide a master plan to develop and control wargaming activities in DoD. We believe this absence of oversight and policy guidance by OSD and the Joint Staff has contributed to the proliferation of wargaming centers in DoD that have unclear and overlapping missions and capabilities.

Navy. The Space and Naval Warfare Systems Command had spent \$44 million through FY 1987 and had programmed \$43 million through FY 1992 to expand wargaming capabilities, but had done only limited coordination with other DoD activities involved in wargaming activities. The Navy had made plans to centralize wargaming capabilities by developing the Enhanced Naval Warfare Gaming System. This would be a geographically distributed wargaming system that could support the Chief of Naval Operations, fleet commanders, the Naval War College, and tactical training groups. It would provide detailed, realistic computer simulations of the naval warfare environment. System requirements would focus on strategic and tactical wargaming and decisionmaking, development and evaluation of doctrine and tactics, operational planning and evaluation, support of training curriculums, and improvement of wargaming methodologies. However, the Navy had done little coordination with joint wargaming organizations such as the Joint Warfare Center or the Warrior Preparation Center. The Joint Warfare Center, the Warrior Preparation Center, and other Service schools had different computer hardware, software, and models than those the Navy was developing separately for its wargaming network. Thus,

the Navy's system would not allow it to conduct interactive war games involving the Army, the Navy, and the Air Force at the theater level.

The Navy also needed to clarify the objectives and direction of wargaming activities at educational schools and training centers. Developing a wargaming network like the Enhanced Naval Warfare Gaming System will involve Navy commanders in chief from three theaters of operations, with the Naval War College as the focal point. This network will require the College not only to support education and training, but also to support the developing and testing of operational war plans and contingency plans. These are separate and functionally different missions with widely differing requirements for realism of data and associated security requirements; these requirements affect the design and development of wargaming facilities. Use of operational war plans and contingency plans can require Sensitive Compartmented Information Facilities, as well as secure or TEMPEST-approved computer equipment. For example, developing and testing operational war plans requires the processing of classified information from intelligence organizations that have special security requirements. These security requirements include the use of Sensitive Compartmented Information Facilities and TEMPEST-approved computer systems.

In contrast, security requirements for processing information used in wargaming for education and training are less stringent, because real operational data do not have to be processed in educational wargaming. We observed secure facilities and systems at the Navy facilities we visited. The cost to construct such facilities can exceed \$500,000. The presence of the secure facilities and systems was a departure from the concept that wargaming was only used for education and training purposes by the Naval War College. If the objective and direction of wargaming at the Navy schools were limited to education and training, then the investment in secure facilities and equipment was unwarranted because operational data cannot be used at the College under current Joint Chiefs of Staff Policy (Memorandum of Policy [MOP] Number 39).

Considering that the current Joint Chiefs of Staff policy does not permit the distribution of war planning documents to Service schools and colleges, the development of this Navy computer system may not be practical. For example, under the requirements and concept of operations for the Enhanced Naval Warfare Gaming System, remote sites would use it to conduct limited theater-level and battle group tactical problems, resolve special problems in naval warfare, and test and evaluate operational war plans and contingency plans. The use of a centralized computer system to test operational war plans at the Naval War College

would be contrary to the intent of the Joint Chiefs of Staff policy, which prohibits the distribution and use of these plans to Service schools and colleges. To obtain such plans, a waiver to MOP 39 must be granted, but the Naval War College had neither requested nor been granted one.

Air Force Wargaming Center. To avoid spending \$51 million unnecessarily from FY 1988 through FY 1992 on the continued development of the Command Readiness Exercise System, the Air Force needs to improve coordination with other Services and clarify the impact of the Joint Chiefs of Staff policy on that system. The Air Force spent about \$38 million through FY 1987 on developing the system (Phase I), which missed a scheduled operational target date of March 1986. Thus, life-cycle costs of \$89 million for the system through FY 1992 were twice the initial estimate of \$40 million to be spent through FY 1993.

The Air Force had performed insufficient preliminary analyses to ensure that development of the Command Readiness Exercise System would meet wargaming requirements. For example, Phase II would allow joint wargaming with the Army and Naval War Colleges, the National Defense University, and others, but memorandums of agreement, related feasibility studies, and joint management plans for war games had not been executed with them. Therefore, the Air Force had not coordinated its system development with computer systems that the other Services were developing. Coordination on scheduling war games, identifying workload requirements, or developing computer wargaming models and data base management systems with others would have given some assurance that the Command Readiness Exercise System had a joint wargaming capability. Also, the Air Force had not evaluated the Joint Chiefs of Staff policies on the releasability of operational and contingency war plans, as it should do before executing Phase III (operational wargaming) of the Command Readiness Exercise System's development. The Joint Chiefs of Staff policy prohibits the Service schools and colleges from receiving and using operational and contingency war plans. This policy would have to be waived before the Air Force could implement Phase III of the Command Readiness Exercise System's development. We found no evidence that the Air Force had requested or received a waiver.

Because of insufficient analyses and coordination efforts, Air Force requirements for the Command Readiness Exercise System were indefinite, and costs to develop it were understated. The excessive costs to develop Phase I and the lack of adequate analyses for the System resulted in funding cuts which could prevent completion of Phases II and III as proposed. Before the Air Force incurs additional costs for developing the Command Readiness Exercise System, which has limited utility for joint wargaming, the Air Force should evaluate that development in view

of the Joint Staff policies and current systems under development at other military schools, colleges, and centers.

Joint Warfare Center. Other DoD activities should assume the mission and responsibilities of the Joint Warfare Center, to avoid spending \$22 million in operating costs for this activity through FY 1992. Analysis of the Joint Warfare Center's draft charter showed that its mission and responsibilities are unclear. However, the Services and unified commands operate schools, colleges, and training centers with missions similar to those proposed for the Joint Warfare Center. One function of the Joint Warfare Center was to analyze and recommend refinement of joint war plans and operations. This function was also being fulfilled by operating elements of the unified and specified commands which were coordinating computer simulations for evaluating operational and contingency war plans under the Modern Aids to Planning Program.

A second function of the Joint Warfare Center was to develop automated exercise systems for joint training. The Service schools, colleges, and training centers we visited had developed or planned to develop capabilities for joint wargaming exercises and had sponsored joint wargaming exercises in the past. Also, the Joint Warfare Center was insufficiently staffed to accomplish a joint wargaming mission for unified commands and the Joint Chiefs of Staff. Of 46 positions required for FY 1988 through FY 1992, the Joint Warfare Center had only 20 personnel assigned to accomplish its mission. We consider this staffing minimal and potentially ineffective when compared to the 100 personnel assigned to the Warrior Preparation Center, which did not have the worldwide support mission the Joint Warfare Center anticipated. Overall, we concluded that the Joint Warfare Center's operations could be discontinued to avoid spending \$22 million from FY 1988 through FY 1992 because other DoD activities, such as the Warrior Preparation Center, the Air Force Wargaming Center, and the Navy War College were developing automated exercise systems for joint training.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Assistant Secretary of Defense for Force Management and Personnel participate in establishing policies and procedures on wargaming and similar activities -- including simulations, modeling, and exercises -- that define wargaming and clarify responsibilities and relationships of DoD schools, colleges, and training centers involved in joint wargaming activities.

2. We recommend that the Director, Joint Staff, prepare and staff a decision paper for the Chairman, Joint Chiefs of Staff to:

a. Designate an office of primary responsibility within the Joint Staff to establish policies and procedures on wargaming and similar activities -- including simulations, modeling, and exercises -- that define wargaming and clarify responsibilities and relationships of DoD schools, colleges, and training centers participating in joint wargaming activities. These policies and procedures should include provisions to oversee, monitor, and coordinate the acquisition of facilities, computer systems, computer models, data bases, and other developments related to wargaming, simulations, exercises, and other defined and specified operational responsibilities and missions.

b. Discontinue operations at the Joint Warfare Center and transfer management oversight responsibilities (now assigned to the Joint Warfare Center) to the Joint Staff.

c. Initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue funding the operations of the Joint Warfare Center, and adjust the Five-Year Defense Plan accordingly.

3. We recommend that the Deputy Chief of Naval Operations for Naval Warfare:

a. Direct the Naval War College to request a waiver from the Joint Staff to allow the development, testing, and analysis of operational war plans and contingency plans for the Chief of Naval Operations. If denied, direct the College to discontinue its support to testing and analysis of plans.

b. Stop constructing Sensitive Compartmented Information Facilities at Naval schools, colleges, and training centers when wargaming activities are limited to education and training.

4. We recommend that the Air Force Deputy Chief of Staff for Plans and Operations:

a. Direct the Air Force program management office to prepare memorandums of agreement and joint management plans to ensure that any further development of the Command Readiness Exercise System is coordinated with other Service schools, colleges, and training centers.

b. Direct the Air Force program management office to make requirements for developing the Command Readiness Exercise System consistent with the Joint Chiefs of Staff policy on the

distribution of operational war plans and contingency plans to ensure that, if appropriate, a waiver to this policy is granted before development of the Command Readiness Exercise System is continued.

MANAGEMENT COMMENTS

The Assistant Secretary of Defense for Force Management and Personnel nonconcurred with Recommendation A.1., which addressed designating an office of primary responsibility in the Office of the Secretary of Defense for two purposes: to establish policies and procedures on wargaming and to provide oversight and coordination for the acquisition of facilities, computer systems, computer models, and data bases used in wargaming. The Assistant Secretary pointed out that the Chairman of the Joint Chiefs of Staff is responsible for policy on coordinating joint training, and that, because joint training is related to wargaming, the Joint Staff would be a more appropriate office for oversight and management of wargaming activities. Also, the Joint Staff had initiated a plan for directing and controlling wargaming activities in DoD that included establishing a Joint Executive Council which would have a participating member from the Office of the Assistant Secretary of Defense for Force Management and Personnel.

Concerning Recommendations A.2.a. through A.2.c., the Joint Staff comments supported designating an office in the Joint Staff to establish policies on coordinating wargaming and the development of computer systems and models. The Joint Staff disagreed with discontinuing the operations and funding of the Joint Warfare Center, and stated that the Center could save money by networking existing computer models for use by commanders in chief. Thus, future development costs would be avoided. Further, it was stated that the Center was also the only organization in DoD with the mission to provide support for joint training to all commanders in chief and the Joint Chiefs of Staff.

While we made no recommendations to the Deputy Under Secretary of the Army (Operations Research), he opposed discontinuing operations at the Joint Warfare Center. The Deputy Under Secretary did not agree that DoD activities could realistically assume the Joint Warfare Center's missions based on the amount of curriculum time that the Army invests on student wargaming activities. The Deputy Under Secretary also suggested that we examine after-action reports on various exercises to gain a better understanding of why our recommendation is unsupportable.

The Assistant Secretary of the Navy (Manpower and Reserve Affairs) nonconcurred with Finding A. and Recommendations A.3.a. and A.3.b. Concerning Finding A., the Assistant Secretary stated

that the Joint Staff and DoD did not have requirements for joint wargaming, although efforts were being made to develop joint wargaming capabilities. Also, the Navy could not define interfaces with other wargaming computer systems because these systems were not mature enough when Navy was developing its system. The Assistant Secretary's comments on Recommendation A.3.a. stated that Navy wargaming did not use war plans and contingency plans for educational purposes. With respect to Recommendation A.3.b., the Assistant Secretary stated that Sensitive Compartmented Information Facilities of the Naval War College and its Tactical Training Groups supported curriculum courses.

The Acting Assistant Secretary of the Air Force (Readiness Support) nonconcurred with Recommendations A.4.a. and A.4.b. Concerning Recommendation A.4.a., the Acting Assistant Secretary stated that funding for Phase II and Phase III of the Command Readiness Exercise System development were removed from the Five-Year Defense Plan, and that if this development continued, it would be coordinated with other Services' programs. With regard to Recommendation A.4.b., the Acting Assistant Secretary stated that operational data can be used for the operational wargaming mission at the Air Force Wargaming Center. The Air Force believes that the Joint Chiefs of Staff policy only applies to professional military educational activities, and the Center does not use operational data for such activities.

The complete text of management comments is at Appendixes C through H.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

We agree with the alternative action presented by the Assistant Secretary of Defense (Force Management and Personnel) that the Joint Staff will establish a Joint Executive Council ensuring the Assistant Secretary's participation in the policy and oversight of computer system and model developments affecting wargaming at DoD schools and colleges. We have revised Recommendations A.1. and A.2. in the final report to reflect the actions planned by the Joint Staff, including participation by the Assistant Secretary in the Joint Executive Council. We request that the Assistant Secretary comment on the revised recommendations in his comments to the final report.

The management comments by the Joint Staff to Finding A. and Recommendations A.2.a., A.2.b., and A.2.c. do not comply with DoD Directive 7650.3, regarding responses to audit reports. Concerning the Joint Staff's disagreement with discontinuing the operations and funding of the Joint Warfare Center, the Joint Staff did not provide any information or documents showing the

significant savings the Center could achieve by networking existing computer models. While this is desirable, we doubt that substantial savings could result; we encountered some systems that used poorly documented computer models. Therefore, networking could result in additional costs to upgrade, modify, or replace existing models. In addition, the Joint Staff's comment -- that the Center is the only organization in DoD with the mission to provide support for joint training to all the commanders in chief and Joint Chiefs of Staff -- is a premature assessment and is unsupported. During our audit, we could not determine what direction the Joint Warfare Center was taking because the Center had an unapproved draft charter; had limited documentation on its support for the development of a computer model; and had not prepared any after-action reports on completed exercises. In addition, the Center had a small staff of 20 people, and its organizational alignment was under review by the Joint Chiefs of Staff. The Center's mission is still evolving and remains nonspecific. Based on a September 26, 1988, request for the Center's Charter, the Joint Staff informed us that the charter would not be approved until April 1989 -- 2 years after the Center was assigned to the Joint Staff. While management contends that the Center is the only organization in DoD that supports joint training to commanders in chief, we fail to see how this can be concluded when an approved charter for the Center is nonexistent. Different DoD activities or groups, including the Army, the Air Force, the Warrior Preparation Center, and the Defense Science Board Task Force, speculate on what the Joint Warfare Center should accomplish; but specific, conclusive information on the appropriate mission for the Center was not readily available. In fact, the Joint Staff planned to eliminate funding for the only mission that the Center was staffed to accomplish: providing technical support to the development of a computer model. Information available on current and future operations of the Center do not unequivocally justify the need for it. Based on our comments, we request that the Joint Staff reevaluate its position and provide revised comments in their response to the final report.

Concerning the Army's comments about other DoD activities' capabilities to assume the missions of the Joint Warfare Center, an impartial observer would have difficulty determining the functions of the Center and how they were to be executed. The Center had not documented any analyses of projected workloads and associated manpower, equipment, or facility requirements. We attributed this to the fact that its missions, functions, and workload were vague and undefined. Further, the Center's draft charter did not mention identifying requirements for scheduling unified command exercises. Therefore, it is an unsupportable position to state that other DoD activities could not assume the Center's missions and functions. The Army's suggestion that we

examine certain after-action reports on completed wargaming exercises was not feasible. During the audit, we requested that the Joint Staff provide us with all after-action reports relevant to our audit evaluations. The after-action report on BOLD VENTURE 87 was not given to us during the audit. After-action reports on BRAVE SHIELD 88 and GALLANT KNIGHT 88 had not been prepared as of November 10, 1988. Therefore, we could not evaluate them during the audit. In addition, we could not determine the role of the Joint Warfare Center in those exercises in our discussions with officials of the Joint Staff. Consequently, neither the audit staff nor management could document the Center's support for unified command exercises.

The Navy's comments on Finding A. state that the Joint Staff and DoD do not have requirements for joint wargaming, although efforts are being made to develop joint wargaming capabilities. This is the thrust of the message in the audit report: to avoid any potential overlap of wargaming functions and missions, requirements for joint wargaming activities should be stated in clear objectives, and policy and guidance should be provided, before capabilities are developed or expanded. Concerning Finding A., the Navy stated that interfaces with other wargaming computer systems could not be defined because those systems were not mature enough. We partially agree with that statement. The Navy's computer system (the Naval Warfare Gaming System) was more mature, and the Navy did begin to coordinate with the Joint Warfare Center and the Warrior Preparation Center after our audit, as stated in the management comments. However, the Navy began enhancing its computer system in 1983, while the Warrior Preparation Center and the Air Force Wargaming Center were developing their computer systems. Although each of these activities planned to have joint capabilities, we found no evidence that they coordinated any aspect of their developments with each other.

The Navy's response to Recommendation A.3.a., on the use of operational war plans and contingency plans for education and training at the Naval War College, are inconsistent with Joint Chiefs of Staff policy. For example, the War Gaming Department at the Naval War College's Center for Naval Warfare Studies provides gaming support to the Chief of Naval Operations and Fleet and NATO commanders to assist in developing, testing, and analyzing operational concepts, plans and orders. Although the Navy considers this a separate mission of the Naval War College, unrelated to education and training, it does involve the use of operational war plans by the College. We attributed these inconsistencies to confusion caused when wargaming capabilities at the Naval War College were expanded without clarifying policies that affected wargaming. The Joint Chiefs of Staff Memorandum of Policy No. 39 makes no specific exception for

releasing Joint Operation Planning Documents (operational war plans and contingency plans) to Service colleges or schools without an appropriate waiver. Therefore, we believe our Recommendation A.3.a. is still valid, since that policy memorandum makes no distinction between various missions of schools and colleges.

The Navy's comments to Recommendation A.3.b., on the construction of Sensitive Compartmented Information Facilities at Naval schools, colleges, and training centers, did not provide any further data to support its position that those facilities were built to support curriculum courses. From the Navy's comments to the report, statements of requirements documents for a Navy System, and Navy instructions, we concluded that the special facilities were built to support wargaming activities unrelated to education and training. For example, the Statement of Requirements for the Naval Warfare Gaming System makes a distinction between what that system should provide in games for the Naval War College and in games for other Naval Commands and components. The Statement of Requirements gives the Naval War College's point of view: war games are an educational tool and there is no specific need for classified information. However, the other Naval Commands and activities achieve objectives that include examination of concepts, plans, procedures, and operational orders for warfighting. Many of the games played by those Naval Commands are conducted using representative simulations of naval forces. These games, therefore, use classified data up to and including the COSMIC/TOP SECRET level. Consequently, sensitive compartmented information is used to represent opposing forces when the College supports games for other Naval Commands and activities. In addition, a Navy Instruction (OPNAVINST 1541.2G) specifically states that the Navy Operational Intelligence Center Detachment at the College is assigned the mission of representing the opposition in war games. Further, the Navy states in its comments that the Sensitive Compartmented Information Facility was built at the Naval War College to support the intelligence detachment's support mission. As a result, we believe that Recommendation A.3.b. is still valid; Sensitive Compartmented Information Facilities are not justified for Naval activities with missions limited to education and training. Based on the audit response, we request that the Navy reconsider its positions and provide revised comments on Recommendations A.3.a. and A.3.b. to the final report.

The alternative actions that the Acting Assistant Secretary of the Air Force (Readiness Support) took on Recommendation A.4.a. are responsive. He said that funding for Phase II and Phase III of the Command Readiness Exercise System development was removed from the Five-Year Defense Plan, and that if efforts are made to

continue this development, they would be coordinated with other Service programs. However, he made no specific comments on the need to prepare memorandums of agreement and joint management plans for any further system development. We believe that any Air Force plans to continue development of the computer system, with its joint wargaming capability, should include formal agreements by the participating Services and other DoD activities. Those agreements should include system development and operational responsibilities and a formal plan for how the agreements will be executed. The memorandums of agreement mentioned by the Acting Assistant Secretary covered participation by Service schools in specific educational exercises, and were not a commitment to support the Air Force's development of the Command Readiness Exercise System.

We disagree with the Acting Assistant Secretary's comments on Recommendation A.4.b. that operational data can be used for the operational wargaming mission at the Air Force Wargaming Center. The Center is part of the Air University, and the Joint Chiefs of Staff Memorandum of Policy No. 39 makes no specific exception for releasing Joint Operation Planning Documents to Service colleges or schools, regardless of their mission requirements. Therefore, our position is that the recommendation is still valid. Accordingly, we request that the Acting Assistant Secretary reconsider his position and provide revised comments to Recommendations A.4.a. and A.4.b. in his response to the final report.

B. Management of the Warrior Preparation Center

FINDING

The Warrior Preparation Center's (the Center's) plans to expand facilities for wargaming activities involving North Atlantic Treaty Organization (NATO) nations could not be supported based on current operations or future workload. This condition existed because the Center had not prepared an updated management plan needed to clarify its operational objectives, requirements, and procedures, and to coordinate NATO participation in wargaming activities. Also, the Center was not in an appropriate organization and command structure to ensure that U.S. Forces in Europe participated in wargaming exercises held at the Center. As a result, the Center's plans to build facilities, purchase computer systems, and develop computer models and data bases should be curtailed to avoid spending \$40 million unnecessarily to expand its wargaming operations. In addition, war games held at the Center were unrealistic because the U.S. Naval Forces, Europe did not participate in them.

DISCUSSION OF DETAILS

Background. The Center was established in 1983 to conduct computer-simulated exercises for training joint U.S. forces in the European command and control environment. The Center provided these exercises to train senior commanders and their staffs.

In 1987, the Center's mission was revised to provide a capability for joint exercises that would involve NATO commanders and their staffs in realistic combat scenarios. The exercises are computerized war games which simulate a NATO battlefield environment using NATO defense plans.

The Warrior Preparation Center was initially funded by the Commander in Chief, United States Air Force in Europe; the United States Army, Europe participated in directing operations of the Center. From FY 1983 through FY 1987, the Center had spent approximately \$37 million on operating and maintaining computer systems and facilities; procuring computer systems, models, and data bases; and building its facilities. The Center intends to spend an additional \$56 million from FY 1988 through FY 1992 to expand its wargaming capabilities. The Center will use \$16 million for its operation and maintenance expenses, and the remaining \$40 million in funds will be used to upgrade an 8800 VAX computer system, develop new computer simulation models, and construct a new building containing a secure storage facility (Sensitive Compartmented Information Facility).

Management. The Center operated without an updated management plan that formalized its wargaming objectives, operating requirements, procedures, and training programs as specified in its current charter. Since operations began in 1983, the management plan had not been updated to incorporate NATO objectives. Likewise, the Center had no written standard operating procedures for conducting war games and maintaining operational records, such as records of analyses of war games and usage of computer systems. As a result, its operations were insufficiently documented to allow evaluations of the usefulness of war games conducted there or evaluations of the need to expand wargaming capabilities.

For example, although 23 war games had been conducted at the Center from FY 1984 through FY 1987, only 8 reports primarily addressed computer system operations and data bases, and not the lessons learned concerning war tactics and strategies. After-action reports on war games held at the Center were not prepared, but discussions on several war games were videotaped. It was difficult to demonstrate or evaluate the benefits derived from past wargaming activities without after-action reports. In addition, neither we nor the Center's management could determine whether the objectives of the war games were achieved. Also, the Warrior Preparation Center did not maintain complete daily records of computer use in war games to determine equipment requirements and use; yet the Warrior Preparation Center was upgrading its computer equipment and renovating its present facilities at a cost of \$40 million.

Organizational Structure. The organizational structure of the Center should be realigned to ensure that U.S. Naval Forces, Europe and NATO nations participate in joint wargaming exercises at the Center. At the time of our audit, only the Air Force and the Army had provided funds for operating the Center and had participated in wargaming activities conducted there. The Center had a charter to train joint U.S. forces, but the Commander in Chief, U.S. Naval Forces, Europe was not represented in its operational chain of command, and the Navy did not participate in any war games there. Also, the Navy provided no funds for operating the Center. Instead of using the wargaming facilities at the Center, the Navy trained NATO commanders at Navy training centers. We believe that including the Navy in wargaming activities at the Center would improve training by putting joint U.S. military forces in a more realistic NATO command and control environment.

In addition to excluding the Navy from the NATO training environment, the Center had obtained no written commitment from NATO nations (the intended customers for its wargaming activities) that those nations would participate in computer-simulated

exercises held there. Further, no agreement or plan existed for those NATO nations to reimburse the U.S. Government for their participation in any wargaming activities held at the Center. Also, the Center had not collected and analyzed its operational cost data necessary to determine an equitable, reimbursable rate to be charged the NATO nations. Consequently, NATO nations had not reimbursed the U.S. Government for their participation in past wargaming exercises at the Center.

In summary, current operations at the Center were less than optimal because they were unsupported, and because the U.S. Naval Forces, Europe was excluded from wargaming activities. Therefore, any further expansion of its facilities should be discontinued to avoid spending \$40 million unnecessarily, and the Center should be organized within the European Command or NATO Command structure.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Commander in Chief, U.S. European Command:

1. Direct the Warrior Preparation Center to prepare an updated management plan specifying the objectives of wargaming activities, the operating procedures, and the requirements for facilities and computer systems necessary to effectively manage wargaming activities there.

2. Initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue the \$40 million in funding required by the Warrior Preparation Center to expand its facilities, to procure computer systems (hardware and software), and to develop computer models. Adjust the Five-Year Defense Plan accordingly.

3. Prepare and staff a decision paper for the Secretary of Defense to coordinate the appropriate organization and command structure for the Warrior Preparation Center to ensure that the U.S. Army, Europe; the U.S. Naval Forces, Europe; and the U.S. Air Forces in Europe are included in wargaming exercises held at the Center.

4. Initiate actions to have a memorandum of understanding executed with the Supreme Allied Commander, Europe, that ensures that the U.S. Government is reimbursed by the North Atlantic Treaty Organization nations that participate in wargaming exercises at the Warrior Preparation Center.

MANAGEMENT COMMENTS

The Commander in Chief, U.S. European Command stated that contrary to Finding B. concerning the preparation of a management plan for the Center, the Warrior Preparation Center had prepared a management plan, but it had not been updated since it was published in November 1983. Therefore, the Commander in Chief concurred, in part, with Recommendation B.1. to prepare an updated management plan that would reflect the Warrior Preparation Center's 5-year development plan.

The Commander in Chief, U.S. European Command nonconcurred with Recommendation B.2. to discontinue the \$40 million in funding for the expansion of computer facilities at the Warrior Preparation Center. He stated that the Center's budget was significantly reduced subsequent to our audit, resulting in a projected \$34.1 million savings for FY 1989 through FY 1992. The Commander in Chief also stated that the requirement to expand and improve the Center had been affirmed by senior U.S. Commanders in Europe, and that these requirements will be reflected in the updated management plan.

The Commander in Chief, U.S. European Command concurred with Recommendation B.3. to staff a paper for the Secretary of Defense outlining the appropriate organization and responsibilities of the U.S. Army, Europe, the U.S. Naval Forces, Europe, and the U.S. Air Forces in Europe at the Warrior Preparation Center.

The Commander in Chief, U.S. European Command concurred in principle with Recommendation B.4. addressing the need to ensure reimbursement to the U.S. Government by North Atlantic Treaty Organization nations participating in wargaming exercises at the Center. He stated that while an acceptable solution is being negotiated, an informal interim arrangement will provide for service-in-kind for the U.S. Government through reciprocal use of allied nations' training sites and facilities.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

Although the Commander in Chief, U.S. European Command states that a management plan exists for the Center, we did not receive a copy of any plan until after we issued the draft audit report. We had asked to review the plan on several occasions during the audit, but it was not given to us. A plan received from the Air Force subsequent to the audit, was dated May 1984, and it referred to a draft management plan prepared in 1983. That management plan, however, did not address the participation of NATO nations in wargaming exercises at the Center. However, the Commander in Chief, U.S. European Command said the plan will be updated; this planned action is responsive to Recommendation B.1.

We have revised the final report accordingly to address the updating of the Center's management plan.

While the Commander in Chief continued to affirm the need to expand the Center, the \$34.1 million reduction in the Center's funds during the budget process satisfy the intent of Recommendation B.2. The difference in our estimated savings of \$40 million shown in the report (page 17) and in Appendix I, and the \$34.1 million contained in the management comments appears to be primarily the funds obligated in FY 1988 to construct a new building at the Center. We request that the management comments to the final report inform us of any savings that may be recoverable from the construction of that building.

The planned action of the Commander in Chief, U.S. European Command, to staff a paper with the Secretary of Defense outlining the appropriate organization and responsibilities of the U.S. Army, Europe, the U.S. Naval Forces, Europe, and the U.S. Air Forces in Europe at the Warrior Preparation Center is responsive to Recommendation B.3.

The comments of the Commander in Chief, U.S. European Command to Recommendation B.4. are responsive. However, the comments did not specifically address the actions to be taken to execute a memorandum of understanding with the Supreme Allied Commander, Europe on the behalf of allied NATO nations. As stated in the report (page 18), without a memorandum of understanding, the Center had no formal commitment that required allied NATO nations to participate in exercises at the Center. This undermines not only the need to expand facilities, but also the need for the Center's existence, considering its current charter. Informal arrangements for reciprocal use of allied nations' training sites and facilities do not represent an obligation by NATO countries to reimburse the U.S. Government for services provided by the Center as required by DoD policy (DoD Directive 2010.9).^{1/} We request that the Commander in Chief provide additional comments to the final report concerning Recommendation B.4. on the actions planned to execute a memorandum of understanding with the Supreme Allied Commander, Europe.

1/ Mutual Logistics Support Between the United States and Governments of Other NATO Countries and NATO Subsidiary Bodies, June 7, 1984.

WARGAMING ACTIVITIES AND SYSTEMS DEVELOPMENT

Army. The Army War College primarily develops and conducts war games, simulations, and exercises to meet educational requirements. The Army War College does not directly support the development and refinement of operational war plans or contingency plans, and does not actively support theater-level war games for purposes other than its educational program. The Army, through the Training and Doctrine Command, develops and maintains computer simulations, models, and war games for training at company through corps level. The Army began to fund the Warrior Preparation Center in 1983 and the Joint Warfare Center in 1986 to accommodate joint theater-level games.

Navy. The Space and Naval Warfare Systems Command is developing a geographically distributed wargaming system (the Enhanced Naval Warfare Gaming System) that can support the objectives of the Chief of Naval Operations, fleet commanders, the Naval War College, and tactical training groups. The Navy's wargaming system will provide a detailed, realistic computer simulation of the naval warfare environment. Main computers for this wargaming network are to be located at the Naval War College; the Tactical Training Group, Atlantic; and the Tactical Training Group, Pacific, with remote sites connected to computers at Commander in Chief, U.S. Atlantic Fleet; Commander in Chief, U.S. Pacific Fleet; Commander in Chief, U.S. Naval Forces, Europe; and the Naval Postgraduate School. The Enhanced Naval Warfare Gaming System will focus on strategic and tactical wargaming and decisionmaking, development and evaluation of doctrine and tactics, operational planning and evaluation, support of training curriculum, and improvement of wargaming methodologies.

Air Force. The Air Force established a Wargaming Review Group in August 1984 to develop a cohesive approach to satisfying the Air Force's operational wargaming requirements. As a result of the Group's efforts, the Air Force established an Air Staff management structure to oversee wargaming systems and to establish policy and funding responsibilities for four major wargaming centers: the Air Force Wargaming Center, the 4441st Tactical Training Group (Exercise Blue Flag), the Joint Warfare Center, and the Warrior Preparation Center. In 1982, before the Wargaming Review Group was established, the Air Force began to centralize wargaming capabilities at the Air Force Wargaming Center. The Command Readiness Exercise System, consisting of facilities, personnel, and computer systems, is being developed at the Air University at Maxwell Air Force Base, Alabama. The System is part of the Air Force Wargaming Center and is being developed in three phases over a 7-year period. Upon completion

of Phase I, the Command Readiness Exercise System would provide wargaming support to the colleges and schools of the Air University complex at Maxwell Air Force Base, Alabama.

In Phase II, the Command Readiness Exercise System would allow joint wargaming with the Army War College, the Naval War College, and the National Defense University, as well as with other intermediate Service schools. Phase III would allow operational wargaming and feasibility assessments of existing and draft war plans, and would interconnect Air Force major commands and special operating agencies with other DoD agencies. This capability would permit DoD officials of these organizations and agencies to use real-world data while wargaming aspects of mobilization, deployment of forces, and crisis management. Segments of the Command Readiness Exercise System, including construction of a building with a Sensitive Compartmented Information Facility for processing classified information, have been completed to support Phase I and portions of Phase II and Phase III of the System's development.

Joint Chiefs of Staff. The Joint Warfare Center was initiated and funded under the direction of the U.S. Readiness Command in FY 1986. The Joint Warfare Center, now located at Hurlburt Field, Florida, was formed to improve joint warfighting capabilities by using automated joint warfare simulations to train military personnel and to analyze and refine joint war plans and operations. With the disestablishment of the U.S. Readiness Command in 1987, the Command's mission and responsibilities were being assigned to other DoD activities. Thus, the Joint Warfare Center was transferred in April 1987 from the U.S. Readiness Command to the Joint Chiefs of Staff as a field operating agency.

The newly created Directorate for Operational Plans and Interoperability in the Joint Staff has assumed some of the U.S. Readiness Command's functions, such as the direction and control of joint education, training, exercises, and doctrine. This office also assumed oversight of the Joint Warfare Center. Another office in the Joint Staff, the Directorate for Force Structure, Resource, and Assessment, has oversight responsibility for the implementation of the Modern Aids to Planning Program. The program will coordinate the analysis of operational war plans and contingency war plans at unified and specified commands by developing uniform computer systems and models. The Joint Warfare Center is also a participant in this program. The center is jointly funded by the Army and the Air Force.

European Command. The Warrior Preparation Center was established in 1983 to conduct computer-simulated exercises for training U.S. forces in command and control operations for a European

environment. In 1987, the Warrior Preparation Center's mission was changed to provide a capability for joint exercises involving North Atlantic Treaty Organization commanders and their staffs in realistic combat scenarios. The Center, located in the Federal Republic of Germany, was initially funded by the Commander in Chief, United States Air Forces in Europe with participation by the United States Army, Europe in directing its operations. The Army has since begun providing about 40 percent of the funding for the Center's operations.

DEFINITIONS

Battle Group. A standing naval task group consisting of a carrier or battleship, surface combatants, and submarines as assigned in direct support, operating in mutual support with the task of destroying hostile submarines, surface, and air forces within the group's assigned area of responsibility and striking at targets along hostile shore lines or projecting firepower inland.

Command and Control. The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander to plan, direct, coordinate, and control forces and operations in the accomplishment of the mission.

Command Post Exercise. An exercise in which the forces are simulated, involving the commander, his staff, and communications within and between headquarters.

Company. A body of soldiers; specifically: a unit (as of infantry), usually consisting of a headquarters and two or more platoons.

Computer Model. A computer program, or series of programs, designed to simulate the logic of actions or interactions of a conflict and provide the results to players for subsequent analysis.

Concept of Operations. A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations is frequently embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation, and is included for additional clarity of purpose. It is frequently referred to as the commander's concept.

Contingency Plan. A plan for major contingencies which can reasonably be anticipated in the principal geographic subareas of the command.

Corps. A formation larger than a division but smaller than an army, usually consisting of two or more divisions together with supporting arms and services.

Exercise. A military maneuver or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training and evaluation. It may be a combined, joint, or single-service exercise, depending on participating organizations.

Interface. A boundary or point common to two or more similar or dissimilar command and control systems, subsystems, or other entities, against which (or at which) necessary information flow takes place.

Model. A representation of an object or structure, or an explanation or description of a system, process, or series of related events. As used in war games, a document or program containing all the rules, procedures, and logic required to conduct a war game.

Modern Aids to Planning Program (MAPP). A Joint Chiefs of Staff program to help the commanders in chief of unified and specified commands acquire and apply modern analytical tools to support their ability to develop, analyze, and evaluate war plans.

Networking. Linking independent computer systems into a chain or group to facilitate direct communication between the systems.

Operation Plan (OPLAN). A plan for a single operation or series of connected operations to be carried out simultaneously or in succession. It is usually based on stated assumptions and is the form of directive employed by higher authority to permit subordinate commanders to prepare supporting plans and orders.

Operations Research (Military). The analytical study of military problems, undertaken to provide responsible commanders and staff agencies with a scientific basis for decisions or actions to improve military operations.

Readiness. The ability of forces, units, weapon systems, or equipment to deliver the outputs for which they were designed.

Sensitive Compartmented Information Facility. An area that has been accredited by the cognizant security authority for the receipt, storage, discussion, and use of Sensitive Compartmented Information (SCI). SCI includes all information and materials bearing special controls that indicate restricted handling within present and future intelligence collection programs and their end products, for which community systems of compartmentation have been or will be formally established.

Simulation. The representation of physical systems and phenomena by computers, models, or other equipment.

Specified Command. A command that has a broad continuing mission and that is established and so designated by the President through the Secretary of Defense with the advice and assistance of the Joint Chiefs of Staff. It is normally composed of forces from only one Service.

TEMPEST-Approved Accreditation. Approval granted by the cognizant TEMPEST approval authority to process SCI electronically, based on favorable evaluation and TEMPEST test results that indicate compliance with the National Policy on Control of Compromising Emanations.

Theater. A geographic area outside the continental United States, for which a commander of a unified or specified command has been assigned military responsibility.

Unified Command. A command with a broad continuing mission under a single commander, composed of significant assigned components of two or more Services, which is established and so designated by the President through the Secretary of Defense with the advice and assistance of the Joint Chiefs of Staff, or when so authorized by the Joint Chiefs of Staff, by a commander of an existing unified command established by the President.

War Game. A simulation, by whatever means, of a military operation involving two or more opposing forces, using rules, data, and procedures designed to depict an actual or assumed real-life situation.



ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-4000

ICE MANAGEMENT
AND PERSONNEL

6 OCT 1988

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING, OFFICE
OF THE INSPECTOR GENERAL, DOD

SUBJECT: Draft Audit Report on Wargaming Activities in the
Department of Defense (Project No. 7IN-514)

This office has reviewed the subject report and offers the attached comments on the finding and recommendations concerning the OSD role in management of wargaming activities. We appreciate the effort your office made in conducting this survey and believe the results will improve the management of wargaming activities in the Department of Defense.


Grant S. Green

Attachment:
As stated

DoDIG DRAFT AUDIT REPORT ON WARGAMING ACTIVITIES
IN THE DEPARTMENT OF DEFENSE (PROJECT NO. 7IN-514)
COMMENTS
ON THE FINDINGS AND RECOMMENDATIONS CONCERNING
OSD MANAGEMENT OF WARGAMING ACTIVITIES

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FINDINGS

Finding 1: DoD components were expanding joint Service wargaming capabilities by purchasing computer equipment, by developing modeling and data base software, and by constructing or renovating facilities without clear objectives or policies from OSD for joint wargaming activities. Neither OSD nor OJCS has established offices of primary responsibility to oversee wargaming activities and to coordinate and control operations of Service schools, colleges, and training centers involved in wargaming.

3

Response: Partially Concur. OSD has not issued written policy guidance for joint wargaming activities. Under the provisions of the Goldwater-Nichols DoD Reorganization Act of 1986 (P.L. 99-433), the Chairman of the Joint Chiefs of Staff is responsible for formulating policies to coordinate joint training activities. Joint Staff oversight and management of wargaming activities is particularly appropriate given the direct relationship that exists among training wargames, development of joint warfighting doctrine, and battlefield wargaming for operational commanders.

The Joint Staff, in turn, has taken a number of steps to develop a plan for directing and controlling wargaming activities within DoD. The actions include the commissioning of a Defense Science Board task force on wargaming and the subsequent adoption of its recommendations. The Joint Staff is also in the process of establishing a Joint Executive Council on wargaming that will be co-chaired by the Director of Operational Plans and Interoperability (J-7) and the Director for Force Structure, Resources and Assessment (J-8). OASD(FM&P) will participate as a member of this executive council.

RECOMMENDATIONS

RECOMMENDATION 1: We recommend that the Assistant Secretary of Defense for Force Management and Personnel prepare and staff a decision paper for the Secretary of Defense to:

9

- a. Designate an office of primary responsibility in the Office of the Secretary of Defense to establish policies and procedures on wargaming and similar activities -- including simulations, modeling, and exercises -- that define wargaming and

clarify responsibilities and relationships of DoD schools, colleges, and training centers participating in joint wargaming activities.

b. Designate an office of primary responsibility in the Office of the Secretary of Defense to oversee, monitor, and coordinate the acquisition of facilities, computer systems, computer models, data bases, and other developments related to wargaming, simulations, exercises, and other defined and specified operational responsibilities and missions of DoD schools, colleges, and training centers.

Deleted

RESPONSE: Nonconcur. The office of primary responsibility will be in the Joint Staff. See response to above finding.



THE JOINT STAFF
WASHINGTON, D.C.

Reply Zip Code:
20318-0300

DJSM-2287-88
25 October 1988

MEMORANDUM FOR THE DOD ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subject: Draft Audit Report on Wargaming Activities in the
Department of Defense (Project No. 7IN-514)

1. This is in reply to your 22 July 1988 memorandum requesting comments on the findings and recommendations made in subject report.
2. The Draft Audit Report on Wargaming Activities in the Department of Defense showed areas in which further evaluation is required and areas that need to be improved. In fact, having recognized the potential problem areas that your report mentions and as a result of recommendations coming from the Defense Science Board study initiated by the Chairman, Joint Chiefs of Staff, the Joint Staff has already established a policymaking organization to improve management oversight for joint training, education, and operational and analytical uses of wargaming.
3. There are numerous areas in which the Joint Staff concurs with the Draft Audit Report suggestions and ideas:
 - a. Wargaming requirements and capabilities are expanding rapidly with some associated duplication of effort. Structured efforts are underway to implement the recommendation of the Defense Science Board (DSB) Report that an appropriate goal is to be able to interoperate or internet Service Professional Military Education schools and operational training centers to enhance their operational training and education utility. The long-range goal is that a set of standards must be established for new developments in the joint area to meet interoperable language and protocol compatibility with other models. The Director for Operational Plans and Interoperability, J-7, will initiate action to standardize, where feasible, the models and simulations and the terminology associated with DOD wargaming efforts.

b. Clear policies on wargaming must be established to ensure that computer wargaming models and systems are coordinated during development. Guidance and controls are also needed to preclude unnecessary construction and improvements to wargaming facilities and capabilities. The Joint Staff is, in accordance with the DSB study, working to establish an implementation plan that will affect the development of future joint wargaming applications by establishing standards for the interoperation of computer wargaming models and systems without stifling the creativity that is the life blood of progress in such a dynamic field.

4. We appreciate the difficulty faced by your auditors in their examination of this technical subject; and it is apparent that we have not accurately conveyed the differences between the purposes and clientele for joint training, joint education, and wargaming. As a result, we feel you have reached some erroneous conclusions regarding the degree of unnecessary duplication of effort and the lack of coordination between activities. Therefore, you made some recommendations regarding the Joint Warfare Center (JWC), Warrior Preparation Center, and the Navy and Air Force wargaming facilities with which we cannot agree. Indeed, we feel strongly that the elimination of the JWC would set back the very coordination process you recommend. Some of the factors that impact these recommendations are:

a. Purposes. War games that are suitable for the education of students differ from those designed to train battle staffs. A game that is optimized to replicate war-at-sea will not be best for air-land conflict. Neither education or training games may yield results that are suitable for analytical purposes.

b. Clientele. The Services, having different missions and different forces, have developed gaming systems which suit their specific audiences. Even with the increasing appreciation of the need to be able to execute, and thus game, joint operations, most of what a Service does is still peculiar to that Service.

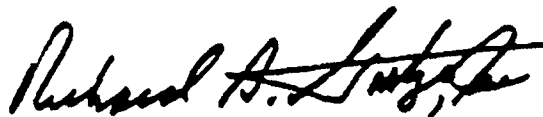
5. The various needs of both the Services and the Joint Community must be met, with balanced concern for cost and effectiveness. The Joint Staff believes that coordination of activities must occur, but accepts the fact that differences exist in their

application. The discontinuation of the JWC would detract from the main thrust that the Draft Audit Report reaches. The JWC has made significant contributions to saving money and utilizing current models while progressing toward the coordination and standardization of future model development.

a. While an Army and Air Force-oriented command, the JWC developed the JESS model to simulate the AirLand Battle. Independently, the Navy developed Enhanced Naval Warfare Gaming System to simulate maritime warfare. The Air Force has several models that meet its needs for aerospace warfare. Each of these is optimized to support the differing needs of its prime customer. Under the Joint Staff, the JWC is evolving from being a model developer to becoming a model "interoperator" that will adapt off-the-shelf models and war games (including those mentioned) to meet the varied objectives established by its CINC clients. The JWC is the only agency that utilizes technology to interconnect existing models, thus saving the cost of developing different models for joint use by the CINCs. The JWC successfully completed major joint exercises for FORSCOM and USCENTCOM, as well as several war games involving interconnecting of the National Defense University and three Service war colleges.

b. The JWC is also the only organization with the mission of providing support to all the CINCs and Joint Chiefs of Staff in their function of conducting joint training. To discontinue the JWC would degrade the ability to execute that mission and lead to even more money being spent on control and development of automated exercise systems for joint training.

6. These comments are offered to assist in making this draft a more accurate reflection of the current situation; but we recommend that this draft audit be held in abeyance and that another audit of wargaming applications for joint training and education be rescheduled in 2 years, when current Joint Staff and Service initiatives will have reached fruition. In preparation for that audit, we look forward to working with you to facilitate the most in-depth examination possible of this vital area.



RICHARD B. GOETZE, JR.
Major General, USAF
Vice Director, Joint Staff

HEADQUARTERS, U.S. EUROPEAN COMMAND RESPONSE TO THE
DRAFT AUDIT REPORT ON WARGAMING ACTIVITIES

ROUTINE
R 201055Z SEP 88
FM USCINCEUR VAIHINGEN GE//ECCS//
TO SECDEF WASHINGTON DC//16/DCD/ATG/AUD//
INFO HQ USAF RAMSTEIN AB GE//WPC//

ZYUW BUSHTCH-1004 2701334

UNCLAS
SECTION 001 OF 002
REPLY TO ECCS-ES
SUBJ: HQ USEUCOM RESPONSE TO THE DRAFT AUDIT REPORT ON WARGAMING ACTIVITIES

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1. REFERENCES:

A. DOD IG DRAFT AUDIT REPORT ON WARGAMING ACTIVITIES IN THE DEPARTMENT OF DEFENSE (71H-514) (87-09) 22 JUL 88.

B. JCS MEMORANDUM OF POLICY NUMBER 39, RELEASE PROCEDURES FOR JCS PAPERS AND INFORMATION, 18TH REVISION, 7 DEC 87.

2. HQ USEUCOM RESPONSE TO THE FINDINGS AND RECOMMENDATIONS CONTAINED IN THE ABOVE REPORT (REFERENCE A) ARE AS FOLLOWS:

A. FINDING/RECOMMENDATION 11.A.1 AND 2, WARGAMING MANAGEMENT (PAGES 18-19). CONCUR. CORRECTIVE ACTION: NONE APPROPRIATE AT THIS HEADQUARTERS. AGREE THERE IS THE NEED FOR RESPONSIBILITY TO BE TAKEN WITHIN THE DOD TO PROVIDE GUIDANCE AND POLICY CONCERNING WARGAMING ACTIVITIES FOR TRAINING. THIS SHOULD TAKE THE FORM OF AN OFFICE SERVING AS: A FOCAL POINT FOR THE HARMONIZATION OF SOFTWARE, HARDWARE, AND DATA; CURTAILMENT OF PROLIFERATION OF INCOMPATIBLE SYSTEMS (A SUBJECT IN THE REPORT); AND SOURCE OF GUIDANCE TO THE SEPARATE SERVICES FOR THE REPRESENTATION OF A MORE JOINT PERSPECTIVE IN THEIR TRAINING WARGAMES AND SIMULATIONS. WE QUESTION THE REQUIREMENT FOR OSD AND OJCS TO BOTH ESTABLISH AN OFFICE TO DEVELOP AND ADMINISTER GUIDANCE AND POLICY ON SIMULATION AND WARGAMING FOR TRAINING. RECOGNIZING THE TRAINING VALUE PROVIDED TO SENIOR COMMANDERS IN OPERATIONAL WARFIGHTING BY WARGAMING, AND CONSIDERING THE RESTRICTIONS OF REFERENCE B, IT IS RECOMMENDED THAT A SINGLE OFFICE BE ESTABLISHED WITHIN OJCS. THIS OFFICE WOULD USE THE RELATIONSHIP BETWEEN THE CHAIRMAN, JOINT CHIEFS OF STAFF AND THE MILITARY DEPARTMENTS TO ALLOW IT TO PROVIDE GUIDANCE TO THE SERVICE SCHOOLS AND CENTERS.

9 & 10

B. FINDING/RECOMMENDATION 11.A.3 AND 4, DISESTABLISHMENT OF JWC (PAGE 28). NO ACTION COMMENT REQUIRED BY THIS HEADQUARTERS. NOTE: APPROPRIATELY CHARTERED AND SUPPORTED, JWC COULD PROVIDE SUPPORT TO THE EUROPEAN THEATER AND INTEGRATE THE EFFORTS OF WPC INTO A THEATER/GLOBAL CAPABILITY. IF MAINTAINED, JWC EFFORT SHOULD BE COMPATIBLE WITH THE ONGOING WPC ACTIVITY.

10

C. FINDING/RECOMMENDATION 11.B.1, PREPARATION OF MANAGEMENT PLAN (PAGE 27). CONCUR, IN PART. CORRECTIVE ACTION: AN UPDATED MANAGEMENT PLAN FOR THE WPC IS BEING PREPARED. THE PLAN WILL BE AN UPDATED VERSION OF THE WPC MANAGEMENT PLAN PUBLISHED IN NOV 83 (CONTRARY TO THE REPORT ALLEGATION OF NO PLAN). WHILE NOT FORMALLY REISSUED SINCE 83, PORTIONS OF THE PLAN HAVE BEEN UPDATED PERIODICALLY BY THE WPC SENIOR OFFICER STEERING COMMITTEE; COMMITTEE APPROVES THE CENTER SCHEDULES, PERSONNEL REQUIREMENTS, AND FUNDING. THE UPDATED MANAGEMENT PLAN WILL ALSO REFLECT THE WPC'S CURRENT FIVE YEAR DEVELOPMENT PLAN. ESTIMATED COMPLETION DATE: 31 DEC 88.

19

D. FINDING/RECOMMENDATION 11.B.2, CURTAILMENT OF \$40M (PAGE 27). NONCONCUR.

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(1) THE NEED FOR CONTINUED EXPANSION AND IMPROVEMENT OF THE WPC HAS BEEN AFFIRMED BY THE SENIOR U.S. COMMANDERS IN EUROPE (USCINCEUR, CINCSAREUR, CINCSNAVEUR, AND CINCSAFE), AND IS REFLECTED IN THE UPDATED MANAGEMENT PLAN. THE EXPANSION IS DRIVEN BY THE REQUIREMENT FOR ADDITIONAL COMBAT PROCESSES, AND BY EXPANDING EXERCISE REQUIREMENTS WHICH HAVE BEEN PROGRAMMED AND WILL BE REFLECTED IN THE REVISED MANAGEMENT PLAN.

(2) BASED ON FISCAL GUIDANCE RECEIVED BY USAREUR AND USAF, THE WPC'S BUDGET HAS BEEN SIGNIFICANTLY REVISED SINCE THE DOD IG VISIT. THE BUDGET FIGURES FOR FY88-92, WHICH WERE AVAILABLE AT THE TIME OF THE IG VISIT, ARE SHOWN BELOW ALONG WITH THE REVISED FIGURES AND THE POTENTIAL SAVINGS (\$34.3M TOTAL):

	FY88	FY90	FY91	FY92
BUDGET FORECAST (SEP 87)	11.8M	30.3M	23.8M	23.4M
CURRENT FORECAST (AUG 88)	8.2M	13.8M	18.7M	13.8M

ACTION 16(1)
INFO QUAL CONTROL(1) SECDEF(8) DAHPA(1)

(U,8,7,F)

HEADQUARTERS, U.S. EUROPEAN COMMAND RESPONSE TO THE
DRAFT AUDIT REPORT ON WARGAMING ACTIVITIES (Continued)

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Page No.

SAVINGS \$2.0M \$17.1M \$4.0M \$0.0M
ESTIMATED COMPLETION DATE: ACTION COMPLETED.

E. FINDING/RECOMMENDATION II.B.3, JOINT COMMAND STRUCTURE (PAGE 28). CONCUR. CORRECTIVE ACTION: HQ USECOM WILL STAFF A PAPER OUTLINING THE ORGANIZATION AND COMMAND STRUCTURE FOR THE WPC. THIS WILL DELINEATE THE JOINT RESPONSIBILITIES OF USAREUR, USMAVEUR, AND USAF, AND REFLECT USCINCEUR'S ASSUMED DIRECTIVE AUTHORITY OVER DEVELOPMENT AT THE WPC. CURRENTLY, CINCUSAREUR AND CINCUSAFE SERVE AS EXECUTIVE AGENTS TO IMPLEMENT DESIGN. USCINCEUR HAS REVIEWED THE ORGANIZATION OF THE WPC AND HAS REQUESTED USMAVEUR PROVIDE RESOURCES TO ASSIST IN THE IMPLEMENTATION AND EXECUTION OF NAVAL PLAY AT THE WPC. DUE TO CONGRESSIONALLY MANDATED REDUCTIONS IN OFFICER POSITIONS, USMAVEUR HAS BEEN UNABLE TO PROVIDE PERSONNEL SUPPORT, HOWEVER, CINCUSMAVEUR HAS ESTABLISHED NAVY POINTS OF CONTACT ON HIS STAFF TO ASSIST WPC OPERATIONS. IN JUL 88, THE U.S. NAVAL OCEAN SYSTEMS CENTER DELIVERED A NAVAL MODEL TO THE WPC FOR INTEGRATION INTO ITS OVERALL ARCHITECTURE. THE FULL INTEGRATION OF NAVAL OPERATIONS INTO THE WPC WILL REQUIRE APPROXIMATELY ONE YEAR AND WILL BE DEPENDENT UPON AVAILABLE RESOURCES.
ESTIMATED COMPLETION DATE: 31 JAN 89.

19

F. FINDING/RECOMMENDATION II.B.4, REIMBURSEMENT BY NATO (PAGE 28). CONCUR IN PRINCIPLE. CORRECTIVE ACTION:

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(1) THE MAJORITY OF THE CURRENT EFFORT AT WPC IS STILL U.S. (70% OF ALL PERSONNEL PARTICIPATING IN THE LAST 33 EXERCISES HAVE BEEN U.S.). ALLIED PARTICIPATION HAS OFTEN BEEN INTRODUCED TO ENHANCE THE U.S. EFFORT. THERE IS AN INFORMAL INTERIM ARRANGEMENT IN EXISTENCE TO PROVIDE SERVICE-IN-KIND THROUGH THE RECIPROCAL USE OF ALLIED TRAINING SITES AND FACILITIES.

(2) USCINCEUR HAS ADDRESSED THE REIMBURSEMENT ISSUE WITH THE SHAPE STAFF, THE NATO MILITARY COMMITTEE, AND THE ALLIED COMMAND EUROPE (ACE) MAJOR SUBORDINATE COMMANDERS IN AN EFFORT TO SEEK APPROPRIATE RESOLUTION. NEGOTIATION IS ONGOING AT USCINCEUR, CINCUSAREUR, CINCUSAFE, AND SHAPE.

(3) THE WPC HAS PROVIDED ESTIMATES OF EXERCISE COSTS TO THE SHAPE STAFF FOR USE IN PLANNING. THE SPECIFIC ISSUE IS PART OF THE OVERALL PROBLEM WITH BURDEN SHARING. AN EQUITABLE AND MUTUALLY ACCEPTABLE SOLUTION IS BEING SOUGHT. AS ALLIED USERS BECOME MORE FAMILIAR WITH THE VALUE OF WPC TRAINING, OTHER REIMBURSEMENT OPTIONS WILL BE INTRODUCED.

ESTIMATED COMPLETION DATE: 30 SEP 90.

G. APPENDIX C, PAGE 38, REPORT OF POTENTIAL MONETARY SAVINGS AND OTHER BENEFITS RESULTING FROM AUDIT (PAGE 38). (RECOMMENDS A TOTAL OF \$40M IN SAVINGS FROM WPC FUNDS FOR THE FISCAL YEARS 88 THROUGH 92.) NONCONCUR.

64

(1) AS IDENTIFIED IN PARAGRAPH D, THE SOURCE FROM WHICH THE DOD IG EXTRACTED THE \$40.398M FIGURE IS NOT KNOWN;

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ADDITIONALLY, FY88 FUNDS HAVE ALREADY BEEN OBLIGATED.

(2) RECENT REVISIONS TO THE WPC BUDGET HAVE RESULTED IN A PROJECTED \$34.1M SAVINGS FOR THE YEARS FY89-92. SAVINGS BASED ON WPC REVISIONS, AND THOSE BASED ON DOD IG RECOMMENDATIONS, ARE SHOWN BELOW:

	PROGRAMMED BUDGET SAVINGS				
	FY89	FY90	FY91	FY92	TOTAL
BASED ON CURRENT	2.0M	17.1M	4.0M	9.50M	34.10M
WPC BUDGET FORECAST					
DOD IG (RECOMMENDED)	0M	0.75M	12.25M	7.75M	31.75M

3. POC THIS HEADQUARTERS IS DR. PAUL J. DEASON, ECIS-ES, AV 430-6354. BT



DEPARTMENT OF THE ARMY
OFFICE OF THE UNDER SECRETARY
WASHINGTON DC 20310 0102



2 November 1988

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: IG DOD Draft Report on Wargaming Activities in the
Department of Defense (7IN-514)

The Department of the Army appreciates the extensive effort on the part of your staff to compile this report. It is particularly timely based upon the infusion of state-of-the-art simulations into both our institutional and unit staff training strategies.

The draft report confirms many of the issues raised in the recent Defense Science Board (DSB) Task Force Report on Computer Applications to Training and Wargaming. In some instances the report's recommendations, with respect to closing the Joint Warfare Center and curtailing the activities of the Warrior Preparation Center, need further analysis and discussion. Further, the draft report's random organization of facts, findings, and recommendations do not readily lend themselves to executable actions.

Therefore, the Department of the Army nonconcur with the report as written. We offer for your consideration specific comments at Enclosure 1. Additionally, the Army fully endorses the Warrior Preparation Center's comments at Enclosure 2. We look forward to working with you on this very important report and stand ready to assist in any way possible.

2 Encls

Walter W. Hollis
Deputy Under Secretary of the Army
(Operations Research)

CF:
Secretary of the Navy
Secretary of the Air Force
Commander-in-Chief, USEUCOM
Commander-in-Chief, USAREUR

Background page 2. "Conceptually, the Army believed the value of wargaming stemmed from its potential to be used as an analytical or war planning tool; the Navy and Air Force believed wargaming had value for education and training. Within DoD, the Navy and Air Force concept of wargaming was prevalent. Therefore, the audit focused on selected DoD Components (schools, colleges, and training centers) that used wargames for that purpose."

1

Nonconcur. The Army views wargaming as a tool applicable to both analysis and training. In the training arena, we are exploiting state-of-the-art simulations in the Army War College, Command and General Staff College, and Branch Schools to provide a dynamic student learning vehicle. These same techniques are being used for homestation battalion through corps staff level training employing the Army's Family of Simulations (FAMSIM). Further, as an outgrowth of the Army's National Training Center experiences, we have initiated a simulation driven corps/divisional command and staff training exercise called the Battle Command Training Program (BCTP).

Finding page 5. "Neither OSD nor OJCS has established offices of primary responsibility to oversee wargaming activities and to coordinate and control operations of the service schools, colleges and training centers involved in wargaming."

3

Concur with Comment. As an outcome of the Defense Science Board Task Force Report on Computer Applications to Training and Wargaming, the Joint Staff has initiated actions in coordination with the Services and Unified Commands to charter the oversight of joint models (Joint Models and Wargaming Executive Council) and the Joint Warfare Center (Joint Warfare Center Executive Steering Committee). The Army fully supports both these initiatives and expects each to materially contribute to resolving modeling duplication of effort, while also realizing Congressionally mandated Joint Training Objectives.

Finding page 17. "Joint Warfare Center. Other DoD activities should assume the mission and responsibilities of the Joint Warfare Center, to avoid spending \$22 million in operating costs for this Center through FY 1992. Analysis of the Joint Warfare Center's draft charter showed that its mission and responsibilities are unclear. However, schools, colleges, and training centers that the Services and Unified Commands operate are currently accomplishing or could accomplish missions and responsibilities similar to those proposed for the Joint Warfare Center."

9

Nonconcur. Given the amount of curriculum time the Army will be investing towards student wargaming activities, we do not understand how the DoD IG Auditors arrived at the conclusion that the " DoD activities " could realistically assume the Joint Warfare Centers' missions. Further, there exists a fundamental difference in the support and preparation requirements for a Unified Command level exercise. We suggest that the auditors examine the USREDCOM, USFORSCOM, and USCENTCOM after action reports for BOLD VENTURE 87, BRAVE SHIELD 88, and GALLANT KNIGHT 88 for a better understanding why their recommendation is unsupportable.

Finding page23. " The Warrior Preparation Center's (the Center's) plans to expand facilities for wargaming activities involving North Atlantic Treaty Organization (NATO) nations could not be supported based on current operations or future-workload." 17

Nonconcur. The Army fully endorses the Warrior Preparation Center's comments on the draft report's findings. Additionally, the report's recommendations fail to take into consideration the significant efforts by CINCEUR, CINCUSAREUR, CINCUSAFE, and now CINCNAVEUR to foster the use of interactive simulations throughout NATO. Their combined efforts to institutionalize the use of simulations vice the previously used low fidelity prescribed outcome exercises will be a significant contribution to NATO interoperability at the operational level of war. We are all cognizant of the "burden sharing" issue, but this is a problem for diplomatic resolution in conjunction with similar national defense investment discussions.

Recommendation II.B.1. Direct the WPC to prepare a management plan specifying the objectives of wargaming activities, the operating procedures, and the requirements for facilities and computer systems necessary to effectively manage wargaming activities.

Concur.

Corrective Action: An updated management plan for the WPC is in preparation. The plan will be an updated version of the WPC management plan which was published in August 1983. It will also reflect the WPC's current five year development plan and the management guidance provided quarterly by the WPC Senior Officers Steering Committee (SOSC).

Completion Date: 31 December 1988.

Recommendation II.B.2. Initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue the \$40 million in funding required by the WPC to expand its facilities, to procure computer systems (hardware and software), and to develop computer models. Adjust the Five Year Defense Plan accordingly.

19

Nonconcur.

- We are unable to identify the source from which the DoD-IG extracted the \$40M figure for FY88 - FY92 WPC expansion.
- By the time the DoD-IG report reached this headquarters (mid-August 1988), FY88 funds had already been spent or obligated and any potential savings for FY88 are moot.
- Based on management guidance provided by the WPC SOSC and fiscal guidance received by the European commands, the WPC's budget has been significantly revised since the DoD-IG visit. The budget figures for FY89 through FY92 which were available at the time of the visit are shown below along with the revised figures and the scheduled savings. These savings result from modifying planned expansion and procurement.

	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>
Budget Forecast (Sep 87)	11.8M	30.1M	23.6M	23.4M
Current Budget Forecast (Aug 88)	9.2M	13.0M	18.7M	13.9M
SAVINGS	\$2.6M	\$17.1M	\$4.9M	\$9.5M

- For the four years FY89 through FY92, savings of 34.1 million dollars have already been identified since the DoD-IG visit.
- The need for continued expansion and improvement of the WPC has been affirmed by the senior US commanders in Europe (CINCUSAFE, CINCUSNAVEUR, CINCUSAREUR, AND CINCEUR). The expansion is driven by the requirement for additional processes and by expanding exercise requirements.

Recommendation II.B.3. Prepare and staff a decision paper for the Secretary of Defense to coordinate the appropriate organization and command structure for the WPC to ensure that USAREUR, USNAVEUR, and USAFE are included in wargaming exercises held at the Center.

Nonconcur.

- The organization, control, and size of the WPC do not require a SECDEF decision.
- Although under the administrative control of USAREUR and USAFE, CINCEUR has taken directive authority over development at the WPC and has designated CINCUSAREUR and CINCUSAFE as executive agents to implement his design.
- CINCEUR has reviewed the organization of the WPC and has requested USNAVEUR provide resources to assist in implementation and execution of naval play at the WPC. Due to Congressionally mandated reductions in officer positions, USNAVEUR has been unable to provide personnel support. However, CINCUSNAVEUR has established Navy points of contact on his staff to assist WPC operations.
- In July 1988, at the request of the WPC, the US Naval Ocean Systems Center delivered a naval model to the WPC for integration into its overall architecture. The full integration of naval operations into the WPC will require approximately one year and will be dependent upon available resources and computer equipment.

Recommendation II.B.4. Initiate actions to have a memorandum of understanding executed with SACEUR that ensures the US Government is reimbursed by NATO nations participating in wargaming exercises at the WPC.

19

Nonconcur.

- USCINCEUR has addressed this issue with the SHAPE staff, the NATO Military Committee, and the Allied Command Europe (ACE) Major Subordinate Commanders.
- Planning is ongoing at the CINCUSAREUR, CINCUSAFE, CINCEUR, and SHAPE levels.
- The WPC has provided estimates of exercise costs to the SHAPE staff for use in planning.
- During the 33 exercises which have been held at the WPC, 70% of all personnel and 70% of the general officers participating have been U.S.

Finding, Page 23. The Center was not in an appropriate organization and command structure to ensure U.S. Forces in Europe participated in wargaming exercises at the Center....In addition, wargames held at the Center were unrealistic because U.S. Naval Forces, Europe did not participate.

Nonconcur.

- Through early 1988, the focus of WPC exercises was on the NATO Central Region. The exercises covered only the first few days of conflict. Hence, there was no significant role for naval participation.
- As the WPC has expanded, CINCUSAREUR and CINCUSAFE have invited CINCUSNAVEUR to provide a representative to the WPC to assist in implementing and improving naval play. As mentioned above, due to Congressionally mandated officer reductions, USNAVEUR has been unable to provide representation.
- The WPC has conducted two Southern Region exercises which involved significant US Navy participation and a Northern Region exercise which also included naval operations.
- Two additional air exercises are scheduled in late 1988 which will involve US Naval participation. NATO Northern Region and Southern Region exercises with significant naval participation are scheduled for early 1990.

Discussion Topic, page 25. The Center had no written standard operating procedures for conducting wargames and maintaining operational records, such as records of analysis of war games and usage of computer systems. As a result, operations were insufficiently documented to allow evaluations of the usefulness of wargames conducted there or evaluation of the need to expand wargaming capabilities. ... It was difficult to demonstrate or evaluate the benefits derived from past wargaming activities without after-action reports. In addition, neither we nor the Center's management could determine whether the objectives of the war games were achieved. 18

Nonconcur.

- The mission of the WPC is to support commanders responsible for forces at the operational-level of war by providing the capability to exercise joint commanders and their staffs against a dynamic enemy without the constraints imposed by field exercises or the limitations of scripted exercises.
 - Unlike educational institutions and most other training facilities, the players at the WPC normally use actual war plans when conducting exercises. The organizations training at the WPC use actual commanders and staffs and deal with issues by which they would be confronted in actual combat.
 - The commands training at the WPC determine exercise objectives and prepare after-action reports. It is their responsibility and prerogative to evaluate the success of the exercise, the training value received, and the degree to which the objectives were achieved.
 - All commands which have trained at the WPC express approval of the training obtained and all have returned for additional exercises or have indicated their intention to do so.

- Since July of 1987, an after-action report has been prepared by the WPC on each exercise. These reports focus on lessons learned concerning war, tactics, and strategy.
- In May 1988, a report (classified US SECRET) entitled "Operational Lessons Learned During Exercises at the WPC" was prepared by the WPC and distributed to Senior Service Schools and operational organizations both in CONUS and in Europe.
- The process of preparing after-action reports of lessons learned on each exercise and preparing a yearly summary report of lessons learned has been institutionalized at the WPC.
- The WPC maintains records of computer usage during exercises through the use of the System Performance Monitor (SPM) system. During WPC exercises, the average utilization of the WPC Cluster System (encompassing 7 VAX computers) was approximately 80%.
- However, it is peak not average utilization, which drives expansion. Growing exercise requirements, in terms of the number of processes included and the number of participants and organizations, have been the major contributors to forcing system expansion.

Appendix C, page 38, Report of Potential Monetary Savings and Other Benefits Resulting from Audit. Recommends a total of \$40M in savings from WPC funds for the fiscal years 88 through 92.

64

Nonconcur.

- As previously mentioned, we are unable to identify the source from which the DoD-IG extracted the \$40.396M figure.
- By the time the report reached this headquarters (mid-August 1988), FY88 funds had already been spent or obligated and any potential savings for FY88 are moot.
- As previously discussed (response to Recommendation II.B.2), revisions to the WPC budget, made since the DoD-IG visit, have resulted in \$34.1M savings for the years FY89-92. Savings based on WPC revisions are shown below along with DoD-IG recommendations:

	<u>SAVINGS*</u>				
	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>	<u>TOTAL</u>
DoD-IG (Recommended)	5M	6.75M	12.25M	7.75M	31.75M
Based on Current WPC Budget Forecast	2.6M	17.1M	4.9M	9.50M	34.10M

* Vice WPC Budget Forecast as of Sep 87.



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

13 OCT 1988

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR
GENERAL FOR AUDITING

Subj: DODIG DRAFT REPORT ON WARGAMING ACTIVITIES IN THE
DEPARTMENT OF DEFENSE (PROJECT NO. 7IN-514) - INFORMATION
MEMORANDUM

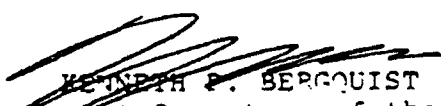
The Draft report on wargaming in the Department of Defense has been reviewed and the following comments are provided.

Limiting the scope of the audit to only education and training has distorted the purpose and benefits wargaming has provided to the Department of the Navy. Navy wargaming provides a detailed, realistic simulation of the naval warfare environment which supports multiple objectives for the Chief of Naval Operations, Fleet Commanders, Naval War College (NWC) and Tactical Training Groups (TTGs). The benefits of the full spectrum of wargaming must not be viewed in isolation and extend well beyond education and training.

War plans and contingency plans are not used by the Naval War College or either Tactical Training Group for educational purposes. Such use could result in stereotyped responses and limit educational value. Naval wargaming facilities, however, have been used by the CNO and fleet commanders in a non-education scenario to evaluate existing or proposed plans.

Sensitive Compartmented Information Facilities (SCIFs) were built at the NWC and at the TTGs to support instruction and independent research which required access to sensitive classified information. Although utilized during some wargaming exercises, wargaming is not their primary function.

A summary of specific comments on the DOD Inspector General's Findings/Recommendations are included at TAB A.


KENNETH P. BERGQUIST
Assistant Secretary of the Navy
(Manpower and Reserve Affairs)

TAB A - Navy comments on DODIG Draft Report on Wargaming
Activities in the Department of Defense (Project No.
7IN-514)

Copy to:
NAVINGEN
NCB-5

**NAVY COMMENTS
ON
DODIG DRAFT REPORT ON WARGAMING ACTIVITIES
IN THE DEPARTMENT OF DEFENSE
(PROJECT NO. 7IN-514)**

Final Report
Page No.

A. MANAGEMENT OF WARGAMING FACILITIES

FINDING: Neither OSD nor OJCS has established offices of primary responsibility to oversee wargaming activities and to coordinate and control operations of Service schools, colleges, and training centers involved in wargaming. As a result, the Space and Naval Warfare Systems Command had programmed \$43 million to maintain and expand computer systems without adequate consideration of OJCS policies affecting war plans and contingency plans, the need for special facilities, and joint wargaming capabilities with other DOD activities.

3

NAVY COMMENT: DO NOT CONCUR WITH THE PORTION OF THE FINDING CONCERNING NAVY EXPANSION OF COMPUTER SYSTEMS, THE NEED FOR SPECIAL FACILITIES, AND JOINT WARGAMING CAPABILITIES

During the development of the Naval Warfare Gaming System other service wargaming computer systems were not of sufficient maturity to allow the Navy to define requisite interfaces.

In accordance with DOD directives, Navy wargaming does not utilize war plans and contingency plans in the formulation, planning, or conduct of wargames. SCIFs were built in order to provide support to teaching facilities (Tactical Training Groups (TTG) (Atlantic and Pacific) and to support the intelligence detachment at the Naval War College (NWC).

OJCS and DOD requirements for joint wargaming development did not exist then nor do they now, although efforts are being made to develop joint wargaming capabilities.

DISCUSSION OF DETAILS

The Navy takes exception to the following statements made in the discussion portion of this finding:

DOD IG STATEMENT ON PAGES 6 AND 7 CONCERNING UNDEFINED OBJECTIVES AND MISSIONS:

3 & 4

Therefore, the organizations that have evolved in OSD and the Military Departments appear to have ... undefined objectives and missions.

NAVY RESPONSE: DO NOT CONCUR

Adequate objectives and missions are defined in each of the TTG's and NWC concept of operations and the NWC mission statement. OPNAV Instruction 1541.2G states that war gaming is a vehicle for testing and examining ideas about strategy and higher level tactics; for fleet staffs and individual naval officers to investigate integrated warfare and combined arms operations; and a research tool for identifying and exploiting opportunities.

DOD IG STATEMENT ON PAGE 12 CONCERNING COORDINATION WITH OTHER WARGAMING ORGANIZATIONS:

6

However, the Navy had done little coordination with other joint wargaming organizations such as the Joint Warfare Center (JWC) or the Warrior Preparation Center.

NAVY RESPONSE: DO NOT CONCUR

When ENWGS was being developed there were no other sufficiently mature computer wargaming systems in the other Services from which to design requisite interfaces. However, since JWC started operations, the Navy has conducted extensive liaison which resulted in advances in joint wargaming capabilities. The most recent example being GALLANT KNIGHT 88, and for the past three years in the annual exercise Joint Land Air Sea Simulator.

DOD IG STATEMENT ON PAGE 13 CONCERNING LACK OF CLARITY IN WARGAMING OBJECTIVES AND MISSION

7

The Navy needed to clarify the objectives and direction of wargaming activities.

NAVY RESPONSE: DO NOT CONCUR

The Navy's objectives and direction of wargaming is stated in the concept of operations and mission statements for the NWC and TTGs.

DOD IG STATEMENT ON PAGE 13 CONCERNING THE NWC POSSESSING OPERATIONAL WAR PLANS

7

...raises issues about whether the Naval War College is strictly supporting education and training, or is supporting the development and testing of operational war plans and contingency plans...Possession of operational war plans and contingency plans requires Sensitive Compartmented Information Facilities (SCIF), as well as secure or TEMPEST-approved computer equipment.

NAVY RESPONSE: DO NOT CONCUR

The NWC does not use war plans or contingency plans in wargaming and does not hold them. The SCIF, co-located in the same building as the Wargaming Department, functions in direct

support of the CNWS, and, as required, provides intelligence support for wargaming.

DOD IG STATEMENT ON PAGE 14 CONCERNING THE PRESENCE OF SECURE FACILITIES

The presence of the secure facilities and systems was a departure from the Navy concept that wargaming should only be used for education and training.

NAVY RESPONSE: DO NOT CONCUR

The SCIF's at the TTGs exist to provide support for curricula courses requiring sensitive compartmented information. The Navy concept for wargaming, clearly stated in OPNAV Instruction 1541.2G, entails far more than just education and training.

DOD IG STATEMENT ON PAGE 14 CONCERNING DISTRIBUTION OF WAR PLANNING DOCUMENTS TO SERVICE SCHOOLS AND COLLEGES

In addition, the development of this Navy computer system may not be practical, considering a current OJCS policy that does not permit the distribution of war planning documents to Service schools and colleges...The use of a centralized computer system to test operate war plans at the Naval War College would be contrary to the intent of the Joint Chief of Staff Memorandum of Policy (MOP) Number 39...

NAVY RESPONSE: DO NOT CONCUR

The NWC is not in violation of MOP 39 since war plans and contingency plans are not held at the NWC.

RECOMMENDATIONS FOR CORRECTIVE ACTION:

3. We recommend that the Deputy Chief of Naval Operations for Naval Warfare:

a. Direct the Naval War College to request a waiver from the Office of the Joint Chiefs of Staff to allow the development, testing and analysis of operational war plans and contingency plans for the Chief of Naval Operations. If denied, direct the College to discontinue the testing and analysis of plans.

NAVY COMMENT: DO NOT CONCUR

The Naval War College does not test or analyze operational war plans.

b. Stop constructing Sensitive Compartmented Information Facilities at Naval schools, colleges and training centers when wargaming activities are limited to education and training.

NAVY COMMENT: DO NOT CONCUR

SCIF's at the TTR's and the NWC are to support curricula courses requiring sensitive compartmented information.



DEPARTMENT OF THE AIR FORCE
WASHINGTON, D.C. 20330-1000

1 OF THE ASSISTANT SECRETARY

28 SEP 1988

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

SUBJECT: Wargaming Activities in the Department of Defense,
22 July 1988, 7IN-514 - INFORMATION MEMORANDUM

This is in reply to your memorandum for Comptroller of the Air Force requesting comments on the findings and recommendations made in subject report.

We appreciate the difficult and complex task your auditors have undertaken, but our review of the draft report identified flaws in assumptions and understanding of the subject area. Therefore, we must take exception to the report.

The stated overall audit objectives were to evaluate the adequacy of management policy and procedures for validating the objectives of wargaming activities in DoD. The team limited its scope to selected DoD Components, Service schools, colleges, and training centers whose primary missions were education and training. The report recommends establishing oversight OPRs in the OSD and JCS to control acquisition, development and expansion of wargaming activities.

Key to the Air Force objection is the fact that it is a Service responsibility to train, equip, and maintain its forces. As the report correctly states, wargaming activities within the Services have evolved independently to satisfy the unique missions and objectives of their particular Service and command affiliation. As we work to implement enhanced joint emphasis in the wargaming community, we will assist the JCS in establishing policy. However, Air Force unique training requirements will still exist. Abdication of Service responsibilities is not called for in this matter.

We would appreciate the opportunity to provide additional information and assistance, should you decide to review your findings prior to submitting a final report.

Additional Air Force comments are attached.

ERIC M. THORSON
Acting Assistant Secretary of The Air Force
(Readiness Support)

APPENDIX H
Page 1 of 8

AIR FORCE COMMENTS
DRAFT OF A PROPOSED AUDIT REPORT

WARGAMING ACTIVITIES
IN THE DEPARTMENT OF DEFENSE
PROJECT 7IN-514

Final Report
Page No.

Internal Control Deficiencies Page iii.

iii

"The recommendations in this report address internal control deficiencies as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DOD Directive 5010.38. The internal control deficiencies stem from the absence of OSD and OJCS guidance and policy for DOD wargaming activities. Specifically, OSD and OJCS need to assign responsibilities for and oversee systems acquisitions, developments and expansions of wargaming activities. Also, missions of wargaming centers need to be clarified. Therefore, the senior officers responsible for internal controls within the OSD and OJCS will be provided a copy of this report."

Nonconcur: There are no significant internal control deficiencies regarding wargaming activities in the DOD. Wargaming, as covered by this report, is conducted for a wide variety of training and educational objectives. JCS PUB 2 and DOD Directive 5100.1 provide ample guidance as to the role of OSD, JCS and the Services regarding the formation of policy and procedures to meet DOD training and educational requirements. The internal controls established by Air Force regulations dealing with the development and procurement of automated systems have been closely adhered to. The Air Force Wargaming Center was developed based on an approved Statement of Operational Need and Data Program Directive (DPD). The Program Management Office was chartered by the Undersecretary for Financial Management to implement the DPD and reports quarterly to the Air University commander.

Finding II.A. Page 5.

3

"DOD Components were expanding joint Service wargaming capabilities by purchasing computer equipment, by developing modeling and data base software, and by constructing or renovating facilities without clear objectives or policies from OSD for joint wargaming activities. Neither OSD nor OJCS has established offices of primary responsibility to oversee wargaming activities and to coordinate and control operations of Service schools, colleges, and training centers involved in wargaming."

Nonconcur: The expansion of Air Force wargaming capabilities at the Air Force Wargaming Center (AFWC) is based on clearly defined service training objectives (SAF/FM Charter, 14 Sep 82). These objectives comply fully with DOD and JCS policies regarding service conduct of PME. JCS Pub. 2 and DOD DIRECTIVE 5100.1 require OSD and JCS to review Service school training activities, but does not authorize control of operations at these institutions. This responsibility rightfully remains with the Services.

Finding II.A. Page 5.

3

"Also, the Air Force Wargaming Center had spent about \$38 million, and planned to spend an additional \$51 million, to acquire computer systems and facilities that had limited usefulness for joint wargaming activities."

Nonconcur: The report's funding estimate of \$51M planned expenditure is incorrect. As a result of DOD-wide budget cuts the total AFWC budget (FY88-FY92) is \$21M. To date, \$32M has been spent on development of the Command Readiness Exercise System (CRES) Phase I to provide direct support to the Air University's schools, colleges, and institutes. This included the construction of the wargaming facility.

CRES Phase II was to add a joint wargaming capability by internetting with other Service schools. Research exercises have been conducted under MOAs between the Army and Navy to better define the requirement. In 1986, CRES Phase I was also modified to include the JCS Modern Aids to Planning hardware suite and the Joint Theater Level Simulation System software.

Finding II.A. Page 5.

3

"In addition, the OJCS Joint Warfare Center planned to spend \$22 million on wargaming facilities and operations that could duplicate existing capabilities at other DOD activities."

Nonconcur: The auditors refer to a duplication of capabilities between the JWC and other DOD activities without giving specific examples. In the body of the report, Service schools and colleges were listed among those DOD activities. The existence of wargaming at the JWC and Service schools and colleges does not represent a duplication. The training objectives and audiences of the Joint Warfare Center and Service schools are completely different. Because of the different objectives of these two organizations, one activity does not duplicate the functions of the other.

Recommendation II.1.A. Page 18

9

"1. We recommend that the Assistant Secretary of Defense for Force Management and Personnel prepare and staff a decision paper for the Secretary of Defense to:

a. Designate an office of primary responsibility in the Office of the Secretary of Defense to establish policies and procedures on wargaming and similar activities -- including simulations, modeling, and exercises -- that define wargaming and clarify responsibilities and relationships of DOD schools, colleges, and training centers participating in joint wargaming activities."

Nonconcur: Wargaming at these facilities is conducted for the purpose of training. JCS Pub. 2 provides a comprehensive statement of JCS policy and authority regarding the coordination of the Services' joint training activities. The establishment of an OSD office of primary responsibility for joint wargaming for training purposes would duplicate established JCS policies and procedures.

Recommendation II.1.B. Page 19

Deleted

"b. Designate an office of primary responsibility in the Office of the Secretary of Defense to oversee, monitor, and coordinate the acquisition of facilities, computer systems, computer models, data bases, and other developments related to wargaming, simulations, exercises, and other defined and specified operational responsibilities and missions of DOD schools, colleges, and training centers."

Nonconcur: The function of the Military Departments is to recruit, organize, train, and equip interoperable forces. The establishment of policy and coordination of this function has been delegated to the JCS. This recommendation would result in a duplication of effort.

Recommendation II.2.A. Page 20

10

"2. We recommend that the Director, Joint Staff, prepare and staff a decision paper for the Chairman, Joint Chiefs of Staff to:

a. Designate an office of primary responsibility in the Office of the Joint Chiefs of Staff to establish policies and procedures on wargaming and similar activities -- including simulations, modeling, and exercises -- that define wargaming and clarify responsibilities and relationships of DOD schools, colleges, and training centers participating in joint wargaming activities."

Nonconcur: The Director of Operational Plans and Interoperability (J-7) is already tasked to perform this function. JCS has the

authority to establish policy as recommended in the draft report, but development of procedures for wargaming is a Service responsibility.

Recommendation II.2.B. and II.2.C. page 19

10

"b. Discontinue operations at the Joint Warfare Center and transfer management oversight responsibilities (now assigned to the Joint Warfare Center) to the Office Of the Joint Chiefs of Staff."

"c. Initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue funding the operations of the Joint Warfare Center and adjust the Five Year Defense Plan accordingly."

Nonconcur: The draft charter of the Joint Warfare Center (JWC) is presently being coordinated by JCS with the Services and the Unified and Specified CINC's. This draft is significantly different from the draft charter available in 1987 during the audit. The recommendations to discontinue funding and operations of the JWC should be tabled until the charter is finalized.

Recommendation II.4.A. Page 20

10

"4. We recommend that the Air Force Deputy Chief of Staff for Plans and Operations:

a. Direct the Air Force program management office to prepare memorandums of agreement and joint management plans to ensure that any further development of the Command Readiness Exercise System is coordinated with other Service schools, colleges, and training centers."

Nonconcur: Funding for CRES Phase II and III was removed from the Five Year Defense Plan last year. Any effort by the Air Force to reinstate funding for CRES Phase II will incorporate extensive coordination with the other Service programs.

In the interim, the Air Force Wargaming Center will continue to conduct student research projects and trial exercises within budget constraints to evaluate the feasibility of wargames from physically separated organizations and to define requirements.

The CARMAX series of exercises in 1983, 1984, 1985 began this analysis of interconnecting simulation facilities. MOAs were accomplished between the Air University and the Army War College on this joint research project. At the conclusion of the CARMAX series, the Service schools initiated a follow-on series of exercises called the Joint Land, Aerospace and Sea Simulation (JLASS). As with CARMAX, MOAs between the Air Force, Navy and Army War Colleges were signed. Current MOAs expire with the conclusion of JLASS in Sept 88. AU is drafting follow-on documents to guide any future research efforts.

Recommendation II.4.B. Page 21

10 & 11

"b. Direct the Air Force program management office to make requirements for developing the Command Readiness Exercise System consistent with the Joint Chiefs of Staff policy on the distribution of operational war plans and contingency plans to ensure that, if appropriate, a waiver to this policy is granted before development of the Command Readiness Exercise System is continued."

Nonconcur: The Air Force Wargaming Center has two distinct missions: 1. Support of Professional Military Education (PME). 2. Operational wargaming. Operational plan data has not been used for PME purposes, however, MOP39 does not prohibit the use of such information for operational wargaming such as the Joint Flag Officer Warfighting Course. The proposed development of CRES toward operational wargaming does not violate the intent of MOP39.

Finding II.B. Page 23

17

"The Warrior Preparation Center's (the Center's) plans to expand facilities for wargaming activities involving North Atlantic Treaty Organization (NATO) nations could not be supported based on current operations or future workload. "

Nonconcur: The expansion of the Warrior Preparation Center (WPC) is based on extremely high demand for exercise support within the European Theater. Planned expansion is driven by U.S. training needs.

U.S. forces assigned to NATO must train with NATO forces to perform their assigned combat mission. Training with NATO forces is not unique to automated wargaming at the WPC. This training would occur without this facility. The WPC provides an economic alternative to live exercises, with substantial savings in the areas of maneuver damage, TDY cost, fuel and logistic cost. Improvements in U.S. combat capability by interacting with NATO Allies is more cost advantageous to the U.S. Government than to potentially limit training by charging NATO member nations a specific user fee.

Finding II.B. Page 23

17

"In addition, wargames held at the Center were unrealistic because U.S. Naval Forces, Europe did not participate in them."

Nonconcur: Any exercise/wargame must be bounded by the scope of the forces exercised and the environment in which they operate. The initial wargaming exercises held at the Warrior Preparation Center focused on the first few days of conflict in the Central

Region of Europe. The limited duration and geographical area covered by these exercises effectively ruled out play by Naval forces. Subsequent wargames of greater scope have, in fact, included play by U.S. Naval forces. Additionally, WPC has procured a naval model for inclusion in future exercises.

Recommendation II.B.1 Page 27

19

"We recommend that the Commander in Chief, U.S. European Command:

1. Direct the Warrior Preparation Center to prepare a management plan specifying the objectives of wargaming activities, the operating procedures, and the requirements for facilities and computer systems necessary to effectively manage wargaming activities there."

Nonconcur: All required management documentation for the WPC exists. Documents made available to the DOD(IG) include:

- a. USAFE WPC Program Guidance Letter, 23 May 1983
- b. WPC Management Plan, 1 May 1984
- c. TAF SON 307-83, 18 Nov 1983
- d. PDP T-632
- e. Special Emphasis Programs IAW AFR 27-1, WPC Rating 2-6, 12 Dec 1986
- f. USAFE ISRD AFE-0094, 27 Nov 1985
- g. HQUSAF PMD 4123 (1)/27597F/27411F, 20 Sep 1984
- h. USAREUR/USAFE MOU on WPC, 31 May 88, 20 Jan 87, 23 Feb 84

Recommendation II.B.2. Page 27

19

"Initiate actions with the Assistant Secretary of the Army for Financial Management and the Comptroller of the Air Force to discontinue the \$40 million in funding required by the WPC to expand its facilities, to procure computer systems (hardware and software), and to develop computer models. Adjust the Five Year Defense Plan accordingly."

Nonconcur: We are unable to identify the source from which the DOD(IG) extracted the \$40M figure for FY88-FY92 WPC expansion. During the last year, \$34M has been deleted from the WPC budget for FY89-FY92. The \$40M figure cited in the draft report included FY88 funds which have already been obligated. Fiscal year 1988 funds aside, the \$34M WPC budget reduction actually exceeds the savings proposed in the draft report while not specifically coming from expansion funds.

Recommendation II. B. 3. Page 28.

19

"3. Prepare staff and decision paper for the Secretary of Defense to coordinate the appropriate organization and command structure for the Warrior Preparation Center to ensure that the U. S. Army, Europe; the U.S. Naval Forces, Europe; and the U. S. Air Forces Europe are included in wargaming exercises held at the Center"

Nonconcur: The organization, control, and size of the WPC do not require a SECDEF decision. Although under the administrative control of USAREUR and USAFE, CINCEUR has taken directive authority over development at the WPC and has designated CINCUSAREUR and CINCUSAFE as executive agents to implement his design. USNAVEUR has been requested to provide resources to assist in implementation and execution of naval play at the WPC. Also, CINCUSNAVEUR has established Navy points of contact on his staff to assist WPC operations.

Recommendation II. B. 4. Page 28.

19

"4. Initiate actions to have a memorandum of understanding executed with the Supreme Allied Commander, Europe, that ensures that the U.S. Government is reimbursed by the North Atlantic Treaty Organization nations participating in wargaming exercises at the Warrior Preparation Center."

Nonconcur: The Air Force fully supports burden sharing by the NATO allies. While burden sharing is an important issue, an MOU at this time would be premature because planning is ongoing at the CINCUSAREUR, CINCUSAFE, CINCEUR and SHAPE levels to address this issue.

Appendix C. pages 37-38. Report of Potential Monetary Savings and Other Benefits Resulting from Audit.

63 & 64

Recommendation A.2.c.

Nonconcur: Closure of the JWC would initially defer expenditure of \$22M, but the increased expense of future Joint Exercises would more than offset this reduction.

Recommendation B.2.

Nonconcur: Funds for FY88 have already been obligated by the WPC. Recent DOD-wide budget cuts have reduced the FY89-FY92 WPC budget by \$34M. Fiscal year 1988 funding aside, WPC budget reductions exceed the savings recommended in the draft report. Specific figures for budget savings follow:

	<u>SAVINGS*</u>				
	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>	<u>TOTAL</u>
DOD-IG	5.0M	6.75M	12.25M	7.75M	31.75M
(Recommended)					
Based on	2.6M	17.1M	4.9M	9.5M	34.10M
Current WPC					
Budget Forecast					

POTENTIAL MONETARY SAVINGS AND OTHER BENEFITS

Audit Title: Audit of Wargaming Activities in the Department of Defense

Project No. 7IN-514 Date of Draft Report July 22, 1988

Functional Area Intelligence and Security

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Amount and/or Type of Benefit</u>
Finding A.		
Recommendation A.1.	Provides for OSD participation in setting joint wargaming objectives and guidance to achieve these objectives.	Not quantifiable
Recommendation A.2.a.	Provides for DoD-wide joint wargaming objectives and guidance to achieve these objectives.	Not quantifiable
Recommendation A.2.b.	Eliminates an organization that duplicates other wargaming activities or functions that can be achieved by other DoD activities.	Not quantifiable
Recommendation A.2.c.	Reduce resources for an organization that duplicates other DoD organizations or functions that can be achieved by other DoD activities.	Cost avoidance of \$22,060,000 million during FY 1988 through FY 1992
Recommendation A.3.a.	Compliance with Joint Chiefs of Staff Memorandum of Policy No. 39.	Not quantifiable
Recommendation A.3.b.	Reduce costs for construction of facilities unnecessary for satisfying wargaming objectives in education and training.	Not quantifiable
Recommendation A.4.a.	Provides for memorandums of agreement and joint management plans for continued development of the Air Force Command Readiness Exercise System.	Not quantifiable

POTENTIAL MONETARY SAVINGS AND OTHER BENEFITS

Audit Title Audit of Wargaming Activities in the Department of
Defense
Project No. 7IN-514 Date of Draft Report July 22, 1988
Functional Area Intelligence and Security

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Amount and/or Type of Benefit</u>
Recommendation A.4.b.	Compliance with the Joint Chiefs of Staff Memorandum of Policy No. 39.	Not quantifiable
Finding B.		
Recommendation B.1.	Provides for the development of a management plan and procedures to better manage the Warrior Preparation Center.	Not quantifiable
Recommendation B.2.	Reduce resources for unnecessary expansion of the Warrior Preparation Center.	Cost avoidance \$40,396,000 million during FY 1988 through FY 1992
Recommendation B.3.	Provide for achieving the proper organization and command structure for the Warrior Preparation Center.	Not quantifiable
Recommendation B.4.	Provides memorandum of under- standing to ensure reimbursement to Warrior Preparation Center for participation in wargaming exercises by NATO countries.	Not quantifiable
Total Potential Monetary Benefits		<u>\$62,456,000</u>

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Assistant Secretary of Defense (Force Management and Personnel),
Arlington, VA
Office of the Director for Program Analysis and Evaluation,
Arlington, VA

Department of the Army

Office of the Deputy Chief of Staff for Operations and Plans,
Arlington, VA
Headquarters, U.S. Army Europe, Heidelberg, Germany
Concepts Analysis Agency, Bethesda, MD
Army War College, Carlisle Barracks, PA
Combined Arms Training Activity, Fort Leavenworth, KS
Program Manager for Training Devices, Orlando, FL
Army Intelligence and Threat Analysis Center,
Washington, DC

Department of the Navy

Office of Naval Warfare, Arlington, VA
Commander in Chief, Atlantic Fleet, Norfolk, VA
Naval War College, Newport, RI
Tactical Training Group, Atlantic, Dam Neck, VA
Space and Naval Warfare Systems Command, Arlington, VA

Department of the Air Force

U.S. Air Force Tactical Air Warfare Center, Eglin Air Force
Base, FL
U.S. Air Forces in Europe, Ramstein Air Base, Germany
Air University, Maxwell Air Force Base, AL
Office of the Deputy Chief of Staff for Plans and Operations,
Arlington, VA
Warrior Preparation Center, Einsiedlerhof Air Station, Germany

Organization of the Joint Chiefs of Staff

Commander in Chief, U.S. European Command, Vaihingen, Germany
Commander in Chief, Special Operations Command,
MacDill Air Force Base, FL
Directorate for Manpower and Personnel, Arlington, VA
Directorate for Operational Plans and Interoperability,
Arlington, VA
Directorate for Force Structure, Resource, and Assessment,
Arlington, VA
Joint Warfare Center, Hurlburt Field, FL

ACTIVITIES VISITED OR CONTACTED (Continued)

Defense Agencies

Defense Communications Agency, Arlington, VA
Defense Intelligence Agency, Arlington, VA
Defense Nuclear Agency, Arlington, VA
Defense Mapping Agency, Washington, DC

Other Defense Activities

Defense Science Board, Arlington, VA
National Defense University, Fort McNair,
Washington, DC
Training and Performance Data Center, Orlando, FL

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Comptroller of the Department of Defense
Assistant Secretary of Defense (Public Affairs)
Director, Program Analysis and Evaluation

Department of the Army

Comptroller of the Army
Army Inspector General

Department of the Navy

Comptroller of the Navy
Navy Inspector General

Department of the Air Force

Air Force Inspector General

Other Defense Activities

Commander in Chief, U.S. Army Europe
Commander in Chief, U.S. Naval Forces, Europe
Commander in Chief, U.S. Air Forces in Europe

Non-DoD Activities

Office of Management and Budget

Congressional Committees:

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 Committee on Appropriations
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