

Air Force Wargaming Institute

College of Aerospace Doctrine, Research and Education



Compendium 2002 - 2003



**Maxwell Air Force Base, Alabama
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INTRODUCTION

BACKGROUND

The 1975 Clements Blue Ribbon Panel on Excellence in professional military education cited a need for service schools to develop curricula that stressed warfighting. The panel noted that service schools needed to sharpen students' knowledge of decision-making in combat. In 1976 the Air Force

Chief of Staff's Constant Readiness Tasking directed the Air University to "put more war in the War College." From these two initiatives evolved the concept for the Air Force Wargaming Institute (AFWI). In September 1982 the Assistant Secretary of the Air Force for Financial Management established a program management office at Maxwell Air Force Base, Alabama, to acquire a comprehensive wargaming capability for the Air Force. The facility was dedicated and opened its doors in 1986. Today, this wargaming capability consists of personnel, a facility, hardware and the software necessary to provide a broad range of wargames and exercises to the Air Force, the Department of Defense (DoD) and other international sponsors.

FACILITY

The AFWI is housed in a special-purpose, 56,000 square-foot facility. It can operate in whole or in part as a secure, classified work environment. The building contains 22 seminar and/or game rooms and two conference rooms--all with audiovisual capabilities. The building is designed for maximum flexibility and can be easily manipulated to accommodate different wargames and exercises.



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CADRE MISSION & VISION

The CADRE mission is to: develop, examine, teach and wargame concepts of air and space power doctrine and strategy... provide research and publishing expertise... educate warfighters in the art of air and space power. The CADRE's Mission Statement integrates research, warfare studies, wargaming, intelligence and public affairs education into a seamless package that meets the growing needs of the Air Force and the Joint community. Our Mission Statement supports AETC's mission to "...educate professional airmen to sustain the combat capability of America's Air Force" as well as AU's mission to provide Professional Continuing Education (PCE) courses and research in air and space power, education, leadership, and management. When a student completes a CADRE-taught course, elective, or wargame, that student is ready to apply those new skills in today's expeditionary air and space force. Air Force members also benefit from cutting-edge research and thought-provoking commentary presented in our journals and available on our Internet site.

The CADRE vision is to be the center of intellectual development for air and space warfighters. This Vision Statement summarizes the Commander's vision and dovetails with AETC's vision as we "integrate innovation and technology to...educate tomorrow's air and space leaders." We are also an integral part of the AU vision's "premier military education institution" as our students develop, employ, command and support air and space power through what they learned from courses, wargames and research. The seamless package of research, warfare studies, wargaming, intelligence and public affairs education will continue to evolve as PCE and Professional Military Education (PME) requirements evolve. We will blend real-world data from existing and upcoming Air Force and Joint operating systems, such as the Air Operations Center's (AOC) Theater Battle Management and Control System, into our course exercises and wargames to give our students as much realism as possible as they wargame and exercise what we teach them. We must pursue increasing the use of distance learning blocks as course primers to maximize the available in-residence time we have with our students. Our research and journal articles will continue to push the envelope of concepts and doctrine, expanding our horizons of what our forces can and must do in the next conflict.

AFWI

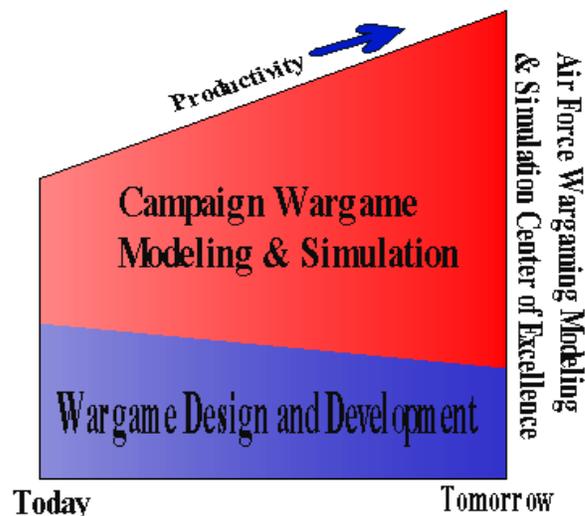
The Air Force Wargaming Institute, CADRE/WG, provides operational and strategic-level wargames to educate and train senior warfighters, commanders and their staffs. These wargames: (1) focus on Joint warfare and air and space power; (2) strengthen the decision abilities of future commanders and their staffs in a realistic, simulated combat environment; and (3) provide direct support to Air University schools and other Air Force, DoD and international customers.

In a typical year, the AFWI plans, develops and conducts approximately 34 wargames for over 9,000 participants. The AFWI uses computers, simulation models and seminars to address how military forces deploy, fight and sustain combat. The Institute provides a “laboratory environment” in which current and future commanders, and their staffs, are given the opportunity to study warfare realistically to identify problems in peacetime before they face them in combat.

Wargames Tomorrow

Wargame model support presently centers on the Air Force Command Exercise System / Accelerated Combat Timeline, or ACES/ACT. Using ACES/ACT, AFWI helps schools achieve their educational objectives by focusing the model-input mechanisms around a campaign-planning construct; thus allowing wargamers to interface with the model in campaign planning in terms of phases, objectives and criteria. The resultant wargames can then be driven from decision criteria to decision criteria, rather than the current artificial time increment. In this manner we will also be able to support the investigation of much larger segments of players campaign plans. This is a critical capability to enable the schools to fully realize their educational objectives of developing operational and strategic thinkers.

Figure 1 – Air Force Wargaming Evolution



As Figure 1 illustrates, we currently focus more on the design and development of our legacy models and less on new campaign wargame technology. CADRE must take advantage of up-and-coming wargame technology in order to progress from the legacy systems currently in use to wargames that are easy to update and can be quickly configured for multiple customers. While each wargame will still require some level of tailoring for each customer's scenario, these new campaign wargames will prove to be easier to support and will also fulfill rapidly changing, educational wargame requirements.

ORGANIZATION

The AFWI is one of six directorates within the College of Aerospace Doctrine, Research and Education. Two functional divisions with a combined staff of 59 officer, enlisted and civilian personnel, and a number of contractors who contribute to the mission, support the AFWI Director (CADRE/WG).

WARGAMING OPERATIONS DIVISION (WGO)

The Wargaming Operations Division is responsible for the entire wargaming lifecycle process, to include definition, design, development, testing/pre-play, preparation, execution and post-wargame analysis. With a \$2M annual budget, WGO provides wargame support to a variety of customers from around the world. The professional men and women assigned to the two branches within WGO provide full-spectrum wargaming to accomplish the AFWI Director's mission.

Wargaming Operations Branch (WGOO)

The Wargame Support Branch provides daily support to the AFWI as well as the preparation and execution of wargames serving the DoD, the Air Force, sister services and our allies. The branch is responsible for the reception and support preparations for over 25 joint wargames, and annual events, including Air War College seminar classes, flag officer courses and the CSAF-hosted Air Force Doctrine Summit. The Support Branch manages the \$2M annual budget on behalf of the Director and serves as the administrative hub for the directorate. The Information Technology (IT) Section of the Wargame Support Branch maintains the complex communications-computer infrastructure and computer systems supporting wargaming operations at the AFWI and all IT issues elsewhere within CADRE. The IT section designed, implemented and currently maintains and operates a state-of-the-art local area network (LAN) that serves as the centerpiece of the Institute's information system. This highly configurable network can be rapidly and easily modified to accommodate a wide spectrum of wargaming scenarios, including classified and unclassified events. A cadre of highly trained small computer technicians provides complete hardware and software support for the many workstations, servers and infrastructure supporting wargame operations and software development activities, as well as providing end-user support throughout CADRE. This quick response team is trained to satisfy dynamic requirements, providing our wargaming guests customized desktop computing and seamless connectivity back to their home station. The systems management team provides centralized administration of modern servers operating in the Windows 2000 and Unix environments. The local area network (LAN) administration team is responsible for managing all user related issues for CADRE. The section hosts a Technology Working Group whose charter is to evaluate emerging technologies, validate diverse customer requirements and ensure the AFWI computing environment remains on the cutting edge.

Wargame Support Branch (WGOS)

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WARGAMING TECHNOLOGY DIVISION (WGT)

This division plans, develops, integrates, and maintains web-based, client-server and stand-alone software on a number of hardware and software platforms in support of wargaming events and other organizational needs. WGT plans, develops, integrates, maintains and modernizes the CADRE network and computer system infrastructure and associated software applications and operating systems; provides network and computer systems support for all of CADRE's events and AFWI's wargaming events. The division provides the commander with expertise, advice, courses of action and recommendations on all technical issues relating to information technology (IT)/software development support and vision.

Software Development and Operations Branch (WGTD)

The Software Development and Operations Branch develops, maintains, integrates and operates computer models, simulations and visualization tools to support the adjudication of wargames. As a software development activity (SDA), the division maintains five in-house models. The Air Force Command Exercise System (ACES) is a joint, theater campaign-level, combat simulation model. The ACES is used to support the Air Command and Staff College's (ACSC) capstone wargame, the Air and Space Basic Course's (ASBC) capstone wargame, as well as wargames for the Joint Services Command and Staff College, United Kingdom, and the Canadian Forces College, Canada. The Joint Educational Mobility Model (JEMM) is a theater logistics model used to generate time-phased force deployment data (TPFDD) and is used in a number of wargames. The Operations Atlantis model is a real-time, tactical air and space employment model used to conduct exercises for Squadron Officer College (SOC). The "Bottom Line" model is used by the College of Professional Development's (CPD) Professional Military Comptroller Course to conduct an Exercise in National Budgeting Priorities (XNBP), which simulates the impact of national budget decisions (presidential, economic, political and military) on the

state of the nation. Finally, the ForceView visualization tool is used to support nearly all AFWI wargaming events to display the Order of Battle (OB). The branch, in conjunction with the Software Engineering Branch (WGTE), provides a comprehensive software development support structure, including project management, configuration management, software quality assurance and testing capabilities. Other branch responsibilities include the development, maintenance and administration of CADRE's public, private and wargame-only Websites, site content and Web-based applications.

Software Engineering Branch (WGTE)

The WGTE provides critical systems and software engineering support to the Chief of the Information Technology (IT) Division for the management of the SDA, to include system architecture, application of project management techniques, system and software engineering principles, adoption of commercial software best practices, software test design and implementation, software configuration management, software quality assurance and software support contractor surveillance. The branch reviews and updates various management databases, inventories and repositories containing lifecycle information on software-intensive wargames assigned to the SDA. It also serves as the focal point for systems migration and data administration. The branch represents the SDA on the Air Education and Training Command (AETC) Software Management Working Group.

Operational Test and Research Branch (WGTN)

The Operational Test and Research Branch provides technical advice and critical analyses on all aspects of modeling, simulation and wargaming. The branch investigates the functional and operational capabilities of wargame models, develops wargame tools and enhances the representation of air and space power in models, simulations and wargames through tailored verification and validation testing. Teamed with Air Force doctrine experts, WGTN analyzes the logic, mathematics and algorithms of combat models to insure doctrinally sound outcomes for AFWI-hosted wargames. The branch also provides operational analysis and model expertise support during the development and execution of wargames. In addition, the branch conducts special interest research for the AFWI Director and CADRE/CC ranging from educational wargaming to future modeling and simulation (M&S) requirements and capabilities. In concert with this work, the branch maintains links to the Air Force and joint training and analysis model communities to stay abreast of the latest M&S developments and innovations.

COMPENDIUM OVERVIEW

This document provides a brief overview of the exercises, wargames and in-house computer models supported by the Air Force Wargaming Institute. The wargames and models described herein have been designed to meet the specific objectives of each game's sponsor. While some of these wargames are specifically designed so they cannot be readily altered, others may be tailored to suit different scenarios and to fulfill other objectives. In the past, the Air Force Wargaming Institute's primary mission focus was on educational wargaming. Today, while continuing to focus on educational wargaming, the Institute has a new direction to more broadly support operational wargaming in support of education and other Air Force operations and functions. The AFWI welcomes requests for assistance from the operational Air Force to develop wargames to meet current and new sponsors' objectives.

For further information on a specific game or model, or the Air Force Wargaming Institute in general, please contact individual wargame directors or Col Craig Goodbrake, Director, Air Force Wargaming Institute, at Comm: (334) 953-6618 or DSN: 493-6618 or Col Davy Crockett, Chief, Wargaming Operations Division, at Comm: (334) 953-8020 or DSN: 493-8020.



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Air and Space Exercise (AEX)

WARGAME SUMMARY

The Air and Space Exercise (AEX) is designed to equip students to understand and appreciate the complex and time-critical operational control processes that occur within the Combined/Joint Air Operations Center (C/JAOC) and between the air air and what air component and other functional components during execution of space operations. The Air and Space Exercise demonstrates warfare and space power, forces and concepts bring to the fight at the operational level of war. It emphasizes the complexities of through simulated Combined/Joint Forces, Air Component Commander (C/JFACC) activities and Air Tasking Order (ATO) execution. Student officers apply the basic concepts of air campaign planning and execution in a simulated C/JAOC environment. This challenging environment requires officers to continually assess the effectiveness of their joint air operations plans and to modify them if required.



OBJECTIVES/PURPOSE:

- a. Synthesize the principles, concepts and processes taught at ACSC to develop and execute a Joint Air Operations Plan (JAOP) in a simulated crisis action planning and execution environment.
- b. Apply rapid and flexible planning processes to achieve objectives during the planning and execution of air and space operations.
- c. Evaluate air objectives, tasks and mission results to assess how they support the Joint Force Commander's (JFC's) objectives and war termination criteria to achieve the desired end state.

GENERAL INFORMATION:

- a. Wargame Sponsor: Brig Gen (Sel) Ronald R. Ladnier, ACSC Commandant, Maxwell AFB AL.
- b. Warlord: Lt Col Dan Novak, Air Command and Staff College, ACSC/DEW, Maxwell AFB AL, DSN: 493-2308.
- c. Wargame Director: Maj Jim Alexander, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6638.
- d. Contractor Lead: Mr. Keith Morris, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6537.
- e. Participants: ACSC students are the game participants, with ACSC faculty acting as the JFC.

- f. Frequency and Duration: Air and Space Exercise is conducted annually at the end of the Air and Space Planning course, the final course in the academic year. The exercise covers nine days.
- g. Wargame Location: Students play this game in the seminar rooms at ACSC. The computer simulation runs occur at the Air Force Wargaming Institute.
- h. Supporting Models and Simulation Tools: One model and one simulation tool support AEX; the Air Force Command Exercise System (ACES) and ForceView. The ACES model expedites the development and input of the player ATO, determines the force-on-force adjudication results and provides on-line reports for the players. Both the tactical and operational (ACT) versions of the ACES model are used. ForceView, a mapping tool, presents the disposition of forces.

WARGAME EXECUTION:

The first week, game play is at the operational level of warfare where students role-play as members of a C/JFACC staff. Students focus on national, theater and air objectives; long-term planning, formulation of the JAOP, developing military courses of action (COAs) and campaign assessment as members of a C/JAOC Strategy Division. The second week, students focus on C/JFACC guidance, air apportionment, targeting, combat assessment and ATO production/execution as members of a C/JAOC Combat Plans Division.

The two-sided game is run on the ACES model and uses a fictional scenario and a notional database. The student seminars play Blue in a “Blue versus Red” format using US AEF aircraft and Global Strike Task Force employment concepts. Air Force Wargaming Institute-trained controllers input the operational forces (OPFOR) (red) campaign plan.

WARGAME DATES:

20 May – 2 June 2003.

BLUE THUNDER

WARGAME SUMMARY:

Air and Space Basic Course (ASBC) is the first professional military education (PME) instruction for commissioned officers. The ASBC inspires new USAF officers to comprehend their roles as airmen who understand and articulate USAF core values, and demonstrate USAF core competencies. Blue Thunder, the pinnacle of the four-week course, challenges officers to demonstrate lessons learned about basic air and tactical warfare. Blue Thunder focuses on the operational and tactical levels of air forces at the operational and tactical levels of war. The officers apply basic concepts in planning the air portion of a campaign plan in an austere and dynamic educational environment. They are required to continually assess the effectiveness of their plan and to make changes, as required.



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OBJECTIVES/PURPOSE:

Blue Thunder demonstrates what air and space power brings to the fight. It emphasizes the complexities of warfare through a simulated Air Operations Center (AOC). It unifies the officers and provides a solid foundation for 21st century airmen working together as a team. Through a dynamic wargame, ASBC seeks to develop lieutenants who can: (1) understand and exemplify the inherent strength found within the USAF core values; (2) articulate and demonstrate USAF core competencies with a firm grounding in air and space power history; (3) value team achievement over individual success. Obtaining the following educational objectives is the mark of success for Blue Thunder:

- a. Integrate deployed air and space forces and air and space concepts to accomplish the national objectives/directives.
- b. Apply USAF doctrine and core competencies in developing air-tasking orders in support of the initial phase of an air campaign plan.
- c. Apply team-building skills essential to survive and operate under austere conditions.

GENERAL INFORMATION:

- a. Wargame Sponsor: Squadron Officer College, SOC/DCW, Maxwell AFB AL.
- b. Warlord: Capt Mike Perry, Squadron Officer College, SOC/DCW, Maxwell AFB AL, DSN: 493-5425.
- c. Wargame Director: Major Mike Kimm, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6198.

- d. Participants: Newly commissioned officers and government service employees attending the Air and Space Basic Course.
- e. Supporting Models and Simulation Tools: Blue Thunder uses the ACES model and the ForceView mapping tool. The ACES model accomplishes computer adjudication. The model permits two-sided wargaming for multiple, simultaneous, and independent wargames. The AFWI controllers use the ACES computer model to simulate combat and provide feedback to participants via on-screen and printed reports. Participants analyze ACES output to continue or alter their plans. The ForceView mapping tool is used to enhance the overall battlespace picture.

EXERCISE EXECUTION:

Blue Thunder pits flights of opposing squadrons against each other as simulated Air Operations Centers.

EXERCISE DATES:

4-7 Nov 02
16-19 Dec 02
3-6 Feb 03
24-27 Mar 03
5-8 May 03
23-26 Jun 03
18-21 Aug 03
29 Sep – 2 Oct 03

COLD ROOF

EXERCISE SUMMARY:

Cold Roof is a seminar-based crisis action planning conducted in conjunction with the Joint Flag Officer Course (JFOWC). It is designed to examine the Crisis Planning (CAP) process as contained in the Joint Planning and Execution System (JOPES) (Joint Pub 5- exercise focuses on the Joint Force Commander's actions responsibilities during a crisis situation's course of development and execution planning phases. Cold Roof to introduce the CAP process to future joint task force commanders, foster the application of joint and service doctrine in a crisis response, examine evolving crisis response issues of support and stability operations and joint task force (JTF) interaction with non-governmental organizations (NGO) and private volunteer organizations (PVO). Exercise classification can be up to Top Secret/SCI.



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OBJECTIVES/PURPOSE:

Cold Roof fosters understanding and appreciation of:

- a. The decision-making process of joint task force commanders during a crisis situation.
- b. The design and execution of the crisis action planning process.
- c. The issues of commanding a joint task force.

GENERAL INFORMATION:

- a. Exercise Sponsor: Armed Forces Service Chiefs.
- b. Exercise Director: Lt Col Greg Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- c. Contractor Lead: Mr. Ken Black, Air Force Wargaming Institute, CADRE/WGOO, DSN 493-9264.
- d. Participants: Approximately 18 general and flag officers per class are divided into two seminars. Several retired general/flag officers act as course moderators during the exercise. The Air Force College of Aerospace, Doctrine, Research and Education provides exercise facilitators and Air Force Wargaming Institute personnel act as control team members.
- e. Frequency and Duration: Cold Roof is held twice a year in conjunction with JFOWC. The evening prior, the attendees receive an intelligence update and exercise overview. The following day the exercise is executed and requires only one day to execute.

f. Exercise Location: Air Force Wargaming Institute, Bldg 1406, Maxwell AFB AL.

EXERCISE EXECUTION:

Cold Roof is a five-hour, two-part crisis action exercise focusing on the activities of the joint task force commander (COMJTF) and his/her major component commanders (COMARFOR, COMMARFOR, COMAFFOR and COMNAVFOR). It is executed with two seminar panels conducting independent exercises. A “lead-in” briefing sets the stage and explains the situation as a developing civil/humanitarian post-nuclear crisis in the India/Pakistan region.

During the first period of the exercise, participants assume the roles of officers in a joint task force. Participants are required to analyze the situation, develop a mission statement and commander’s intent, submit a prioritized list of military courses of action, recommend a JTF composition and propose a course of action to the NCA.

During the second period, participants view a situation update on video, receive President/SECDEF/Combatant Commander guidance and are required to complete the execution planning phase of CAP. The concept of operations, subordinate task assignments, desired end-state, command relationships/boundaries and rules of engagement are emphasized.

The exercise wrap-up begins with a side-by-side “COMJTF” slide presentation of each seminar’s plan to all course participants. Plan similarities and differences are discussed and the game concludes with an open discussion of key lessons learned, led by the attendees with guidance from the retired general/flag officer moderators.

EXERCISE DATES:

2-14 Mar 2003

7-19 Sep 2003

Exercise ENHANCE STABILITY

EXERCISE DESCRIPTION:

This exercise is the final curriculum piece of a course at the Joint Special Operations University that is entitled Civil-course Military Strategies for Internal Development. This of exposes foreign senior military officers and defense seeks officials to a wide array of issues, which often require a coordinated effort between the military and civilian offices of government. It also equips them with strategies for jointly addressing such problems. Exercise Enhance Stability seeks to solidify those lessons with a two-part exercise that forces participants to play the roles of ministers to a fictitious multinational organization. A member country has falls requested help and the group must design an aid plan that within the organization's charter but still addresses the requirements, capabilities and viewpoints of the individual countries.



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COURSE OBJECTIVES:

- a. Participate in a successful team-building effort.
- b. Develop skills for addressing a wide variety of viewpoints and agendas and apply the fundamental concepts behind group dynamics.
- c. Recognize that a wide variety of opinions and requirements can be successfully incorporated into a final group position.

GENERAL INFORMATION:

- a. Exercise Sponsor: USAF Special Operations School, Hurlburt Field FL.
- b. Warlord: Maj Mark Van Zandt, USAF Special Operations School, Hurlburt Field FL,
- c. DSN: 579-1846.
- d. Air Force Exercise Director: Maj Al Fragala, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6637.
- e. Participants: Foreign military officers, political officials and American military personnel assigned to participating countries.
- f. Frequency: Four times per year.
- g. Location: Joint Special Operations University, Hurlburt Field FL.

EXERCISE EXECUTION:

This is a role-playing exercise that occurs over the course of two days. The class is divided into three separate groups that execute parallel exercises. Enhance Stability centers on a group of fictitious countries that are members of a regional multinational organization (MNO). One member country is experiencing severe internal turmoil and approaches the MNO for assistance.

During the first session, participants portray officials for various functional areas of government, such as health or law enforcement, from the stricken country. As such, they must blend their area requirements into an aid request. The final request must fall within the constraints of the MNO charter, provide enough assistance to support their people and still recognize territorial integrity and national pride.

During the second day, attendees assume roles as ministers to the MNO from surrounding countries. One participant plays the minister from the afflicted country and presents his aid request for formal consideration. Participants then fall into formal discussion and debate about how to help their neighbor. All member countries have their own internal problems, viewpoints, histories, assets and resources; “ministers” consider all of these issues as they formulate a final aid proposal to recommend to the MNO general assembly. Each minister receives sealed “diplomatic instructions” from his home government. These are not shown to other group members and the player must use these while developing a final position on the aid request.

As the final part of session two, each seminar presents their aid proposal to the class as a whole, who now represents the MNO general assembly. The class then has the opportunity to ask questions.

COURSE DATES:

TBD.

Exercise in National Budgeting Priorities (XNBP)

EXERCISE SUMMARY:

The XNBP is an unclassified, stand-alone, computerized executive planning exercise national budget priorities as impacted by presidential level decisions. This strategic-level exercise utilizes the "Line" model, which analyzes presidential, economic, military budget decisions and their impact on the state of the nation. It does this by combining the allocations of 17 key areas of budget with accepted economic analytical tools such as Curve and Okun's Law. The "Resulting Model" effect of a presidential administration's policies upon the nation. Its product, a Projected State of the Nation compilation of social and economic indices including voter support, unemployment, gross national product, war risk and inflation. The XNBP stimulates participants to actively test their understanding of budgetary and economic relationships in a realistic and enjoyable environment. It reinforces the relationships between foreign and domestic policy decisions and how allocation of scarce resources to support those decisions affects the state of the nation.



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OBJECTIVES/PURPOSE:

The XNBP aids a player's understanding and appreciation for:

- a. The executive-level budgetary decision-making process.
- b. The relationships involved in the allocation of limited national resources and the subsequent impact on the state of the nation.
- c. The impact of budgetary policy upon foreign relations.
- d. The President's Council of Economic Advisors.
- e. Competition for national resources inherent in the functional organization of the Cabinet and the requirement for an objective executive staff agency, such as the Office for Management and Budget, to advise the President.
- f. Strengths and weaknesses of computer simulations in the analysis of policy alternatives.

GENERAL INFORMATION:

- a. Exercise Sponsor: Air University College for Professional Development (CPD) Professional Military Comptroller School (PMCS), CPD/FM, Maxwell AFB AL.
- b. Warlord: Maj Rodney Troyanowski, CPD/FM, Maxwell AFB AL, DSN: 493-6656

- c. Exercise Director: Mrs. Terry Young-Brinston, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6536.
- c. Contractor Lead: Mr. Brent Chapman, Air Force Wargaming Institute, CADRE/WGOO, DSN: 953-6835.
- d. Participants: Professional Military Comptroller School (PMCS) students.
- e. Frequency and duration: XNBP is conducted in conjunction with each Professional Military Comptroller School class.
- f. Exercise Location: Air Force Wargaming Institute, Bldg 1406 or College for Professional Development, Bldg 1404, Maxwell AFB AL.

EXERCISE EXECUTION:

The “Bottom Line” model resides on one compact disk and can be executed on any portable computer. The XNBP is conducted as an independent three-hour game with each PMCS seminar acting as a team. The game represents a four-year presidential term, with participants making four moves in the form of constructing four annual budgets.

EXERCISE DATES:

The XNBP exercise is held in conjunction with the CPD PMCS Course (Nov, Feb, May, Jul and Sep).

Joint Land, Aerospace and Sea Simulation (JLASS)

WARGAME SUMMARY:

The JLASS is a computer-assisted, theater-level seminar wargame that is executed at the SECRET level. The JLASS game materials are unclassified. It is the only joint-sponsored wargame conducted by the professional military education senior level colleges. Its overall goal is to enhance professional military education through an examination of potential US military responses to regional crises. The primary is on joint and combined warfare conducted at the operational strategic level.



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Goal and Objectives of the JLASS Series:

The goal of the JLASS exercise series is to promote the joint professional military education of all participants by addressing key issues at the strategic and operational levels of war. The JLASS enhances and expands participants' awareness of joint staff and unified command issues by employing joint forces to execute national and theater-level strategies. It prepares joint warfighters by providing the opportunity to develop, apply and adjust theater strategies.

Supporting the JLASS objective includes:

- a. Applying an understanding of US military force structure, its capabilities and limitations, and required theater coordination through exercises and wargaming.
- b. Translation of national military objectives, guidance and theater strategies into theater guidance, objectives and operational focus by using current joint and service doctrine and developing theater and subordinate campaign plans.
- c. Designing and exercising theater command and control relationships.
- d. Comprehending the challenges facing a joint and multinational force employing 21st century battlespace and commercial systems.

GENERAL INFORMATION:

- a. Wargame Sponsor: All six senior service schools; Executive Agent, US Army War College, Carlisle Barracks PA, DSN: 242-3692.
- b. Wargame Director: Lt Col Kelly Hill, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-5286; JLASS website: <https://afwi.maxwell.af.mil/jlass>.
- c. Contractor Lead: Mr. Steve Crawford, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6636.

- d. Participants: Air War College (AWC), Army War College (USAWC), Marine Corps War College (MCWAR), Naval War College (CNW), National War College (NWC) and Industrial College of the Armed Forces (ICAF) students.
- e. Wargame Location: Air Force Wargaming Institute, Bldg 1406, Maxwell AFB AL.
- f. The JLASS employs wargaming models to enhance the game adjudication process. The Joint Educational Mobility Model (JEMM) allows logisticians and operational planners to forecast deployment and arrival times for selected forces into the Area of Operations (AOR). ForceView is an in-house-developed system that represents fielded forces and gives a representation of force movement and strength for both players and controllers. Extended Air Defense Simulation (EADSIM) enhances the adjudication of the employment of weapons of mass destruction (WMD) and the measures taken to counter that threat. Other models can be added to enhance specific scenarios as directed by the game sponsor.

WARGAME EXECUTION:

The JLASS is a multilateral, dynamic, computer-assisted, seminar-based strategic and operational wargame conducted at the field army, task force and tactical air force level and above. Service school participants are divided into Red and Blue teams that assume the role of combined command and subordinate staffs. The Blue team is composed of AWC, USAWC, MCWAR, CNW and ICAF students, while the National War College acts as the Red team staff. Participants are introduced to a crisis scenario that involves regional conflicts 10 years in the future. Their mission is to promote the policies and objectives of their assigned team.

Game preparations begin several months prior to actual execution; with each service school assigned an individual role. The “distributive” phase of the game takes place at home station for players and faculty. The student and faculty inputs are made via a JLASS website. World situation and specific scenario briefings establish the crisis at hand. National interests and objectives of all concerned nations are identified and allied relationships are established. The teams then create a combined command and subordinate component command staff, and develop a theater campaign plan. They establish their campaign strategy, evaluate enemy intent and capability, posture forces and determine logistical requirements to sustain combat operations.

With the completion of the campaign-planning phase, participants assemble at the AFWI and begin the wargame. Force-on-force employment of player assets is made through written move orders. Adjudication is then performed through a combined manual/computer analysis of alliance inputs. The wargame continues for up to four additional moves, with game time intervals varying from days to several weeks or months. Ongoing intelligence and situation updates apprise participants of campaign performance.

WARGAME DATES:

27 Mar - 4 April 2003.

JOINT WARRIOR

WARGAME SUMMARY:

Joint Warrior is a theater-level seminar wargame in conjunction with the Joint Flag Officer Warfighting (JFOWC). It is designed to identify and resolve issues with joint and coalition theater warfare from both CINC component commander perspectives. Joint Warrior is foster discussions of campaign planning and warfighting; exchange of ideas and concepts among senior Air Force, Marine and Naval officers; and the application of joint doctrine in theater warfare. It emphasizes component assignments, basing and employment of forces, force requirements and appropriate courses of action (COA) under conditions of uncertainty. Wargame classification can be up to Top Secret/SCI.



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OBJECTIVES/PURPOSE:

Joint Warrior fosters understanding and appreciation of:

- a. The decision-making process of theater and component commanders during the campaign planning and execution phase of an operation.
- b. The development and execution of a theater campaign plan.
- c. The implications of command when exercised over joint and coalition forces.

GENERAL INFORMATION:

- a. Wargame Sponsor: Armed Forces Service Chiefs.
- b. Wargame Director: Lt Col Greg Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- c. Contractor Lead: Mr. Ken Black, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-9264.
- d. Participants: Approximately 18 general and flag officers per class are divided into two seminars. Retired four-star general/flag officers act as course moderators during the campaign planning phase of the exercise. Six senior field grade officers--two each from the Air Force and Army, plus one each from the Navy and Marine Corps--act as facilitators for the seminar panels. The Air Force Wargaming Institute, Army War College Center for Strategic Leadership, Naval War College Wargaming Department and Marine Corps War College Wargaming Department personnel act as control team members.

- e. Frequency and Duration: Joint Warrior is held twice a year in conjunction with JFOWC and requires three days to execute.
- f. Wargame Location: Air Force Wargaming Institute, Bldg 1406, Maxwell AFB AL.
- g. Supporting Models and Simulation Tools: Joint Warrior is a manually adjudicated wargame. The ForceView mapping tool is used to show troop disposition and potential troop movements based on selected courses of action.

WARGAME EXECUTION:

Joint Warrior is a seminar-based, theater-level wargame focusing on the activities of the theater commander (USCINCCENT) and the major component commanders (USCENTAF, USARCENT, USNAVCENT, USMARCENT and USSOCCENT). It is conducted with two seminar panels conducting independent games. A lead-in briefing sets the stage and explains the general world situation. Participants establish command relationships, develop courses of action and a campaign plan using joint and combined forces. Joint campaign responsibilities of the components are emphasized.

As the scenario progresses, participants are confronted with command concerns unique to the transition phase between peace and war. Rules of engagement (ROE) are discussed and recommended changes developed. With the onset of hostilities, emphasis is placed on the concerns and actions of theater commanders. Participants are given a six-week campaign intelligence and situation update and are then tasked to reassess strategic objectives, refine strategy and perform branch and sequel planning. Supporting issues include land and naval component missions, deep operations, space operations, airspace management, air defense, rear area security and reserve forces.

The exercise wrap-up begins with a side-by-side “Combatant Commander” slide presentation of each seminar’s campaign plan to all course participants. Plan similarities and differences are discussed and the game concludes with an open discussion of key lessons learned, led by the attendees with guidance from the retired general/flag officer moderators.

WARGAME DATES:

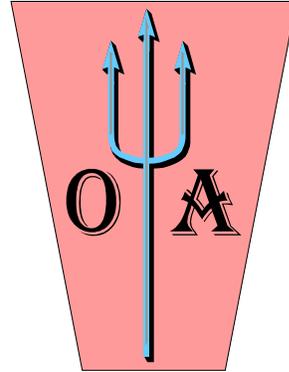
2-14 Mar 2003

7-9 Sep 2003

OPERATION ATLANTIS

WARGAME SUMMARY:

Operation Atlantis is Squadron Officer School's (SOS) exercise using the Atlantis wargame model. The exercise reinforces to the students the concepts of group problem solving, organization, communication, team building, situational leadership followership. It has an ancillary benefit for the students to learn employing air and space power. Students simulate operations command and control center designed to demonstrate elements of Air Control System (TACS) and Air Operations Center (AOC). They conduct battle staff planning by simulating the combat plans an AOC where they define the Joint Force Air Component Commander's (JFACC's) objectives and effectively allocate resources to support those objectives. They then execute and modify in real-time their operations plan. Each SOS seminar of 12-13 students makes up an independent game.



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OBJECTIVES/PURPOSE:

As a capstone exercise, Operation Atlantis is geared toward allowing the students to demonstrate problem solving and group dynamics via a predominantly air and space-based scenario by:

- a. Organizing student participants to meet assigned tasks.
- b. Establishing logical problem-solving methods for handling various situations, including time-sensitive and multitasked events.
- c. Demonstrating strong leadership and strong followership.
- d. Developing methods for them to accomplish effective communications between the various players.

GENERAL INFORMATION:

- a. Wargame Sponsor: Squadron Officer School, SOS/EDCD, Maxwell AFB AL.
- b. Warlord: Capt Tony Meeks, Squadron Officer School, SOS/EDCD, DSN: 493-5425.
- c. Wargame Director: Maj Al Fragala, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6637.
- d. Contractor Lead: Mr. Steve Crawford, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6636.

- e. Participants: SOS students are the game participants, with SOS flight commanders acting as the Commander, Joint Task Force (COMJTF) and higher headquarters.
- f. Frequency and Duration: Operation Atlantis is conducted in conjunction with each SOS class. The exercise, including training and preparation, includes 10 hours in class over a four-day period plus any additional time the students choose to add to the effort.
- g. Wargame Location: SOS, Bldg 1403, Maxwell AFB AL.
- h. Supporting Models and Simulation Tools: Operation Atlantis uses the Atlantis Graphical User Interface (GUI) and adjudication model. Atlantis is an unclassified computer-assisted air and space employment model. It models air forces only, and simulates combat at the high tactical to low operational levels of warfare. Atlantis currently runs on linked personal computers. The model is capable of multiple turns, and sponsor faculty can interpret results with minimal AFWI controller support. Atlantis-based wargames use a common combat model with scenario databases that can be modified to meet the specific requirements of the game sponsor.

EXERCISE EXECUTION:

Operation Atlantis models a notional crisis in which United States military forces are directed to support a friendly government under attack from insurgents. The game uses the fictional continent of Atlantis in its scenario. Participants are tasked to aid by seizing and protecting a specific airfield and its surrounding industrial facilities. Each SOS flight acts as an independent game. The students train themselves on the software and then demonstrate proficiency to their instructor. They then enter a planning phase where they simulate the Combat Plans division of an AOC, preparing the air portion of the Joint Forces Commander's campaign and developing an air tasking order.

During the game's final phase, participants engage in an interactive computerized air battle. The game environment is an active Airborne Warning and Control System (AWACS)-like air picture on computer displays. Participants selectively employ their resources performing command and control functions, tailoring their response to the changing battle. They control all elements of the air battle through both air-to-ground (offensive) and air-to-air (defensive) computer inputs. The computer processes game inputs to adjudicate force-on-force employment. The exercise ends with a comprehensive package of hard-copy status reports. The school staff uses this package as a briefing guide to appraise the participants' performance and to reinforce educational objectives.

WARGAME DATES:

Operation Atlantis is held in conjunction with each Squadron Officer School course.

PEGASUS-CANADA

WARGAME SUMMARY:

Pegasus-Canada is an unclassified computer-assisted, wargame developed by the Air Force Wargaming used by the Canadian Forces College (CFC). The models the first days of war between two alliances. The participants into Blue and Red teams that assume the combined command staffs (CCS) of the two opposing



theater-level Institute and simulation CFC divides role of the alliances.

OBJECTIVES/PURPOSE:

To aid players' understanding and appreciation for:

- a. The decision-making environment of the Joint Forces Air Component Commander (JFACC).
- b. The impact of JFACC decisions on a theater commander's campaign plan.
- c. The synergistic effect of well-integrated air, land and sea component commander plans.
- d. The Integrated Tasking Order (ITO) planning cycle.

GENERAL INFORMATION:

- a. Wargame Sponsor: Canadian Forces College, Toronto, Canada, DSN: 827-6814.
- b. Wargame Director: Lt Col Greg Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- c. Alternate Game Director: Lt Col Tim Gunnoe, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6532.
- d. Participants: CFC students.
- e. Frequency and Duration: PEGASUS-Canada is conducted annually each spring. The wargame requires 10 days for preparation and execution.
- f. Wargame Location: CFC, Toronto, Ontario, Canada.
- g. Supporting Models and Simulation Tools: Pegasus-Canada employs the tactical interface unit of the ACES model, a generic computer adjudication tool. The model permits two-sided wargaming for multiple, simultaneous and independent wargames. The AFWI controllers use the ACES computer model to simulate combat and provide feedback to participants via on-screen and printed reports. Participants analyze ACES output to continue or alter their campaign plans.

WARGAME EXECUTION:

Approximately 50 participants are divided into two Blue and two Red syndicates pitted against each other in simultaneous and independent games. The game covers one day of prewar maneuvering followed by four days of computer-adjudicated warfare. Throughout the week, Canadian media representatives conduct live “television” interviews with key participants as an enhancement to the exercise.

The game begins with the development of theater campaign plans by opposing syndicates. Assuming roles as commanders and their staffs, participants develop strategy, evaluate enemy intent and capability, posture forces and determine logistical requirements to sustain combat operations. Computer-generated map displays and hard-copy status reports provide intelligence support.

Once the campaign plan is complete, participants move to the execution phase of the wargame, making air, land and sea order inputs on personal computers using the ACES model’s tactical-level Graphical User Interface (GUI) software. Participants assign aircraft packages to accomplish offensive, defensive, interdiction, reconnaissance and airspace control and support missions. They accomplish land moves by entering land unit orders for maneuver, reinforcement and fire. Students are also given the opportunity to request certain space-based assets.

After player moves are finalized at the end of the day, their inputs are adjudicated using the ACES model. Map displays and hard-copy status reports are updated to provide battle damage assessment and current intelligence. Armed with the previous move’s results, syndicates continue the game cycle by returning to the planning phase where they either continue or modify their campaign plan and enter a new set of inputs, as they deem appropriate. After the last day of battle, syndicates debrief their campaign plans and provide insights into their successes and failures.

WARGAME DATES:

30 Mar - 17 Apr 2003.

PEGASUS-UK

WARGAME SUMMARY:

Pegasus-UK (United Kingdom) is a computer-assisted, level wargame of the ACES series developed by the Air Wargaming Institute for Britain's Joint Services Command College (JSCSC). The exercise models the first days of a war between two fictional alliances. The JSCSC Directing divides the participants into Blue and Red syndicates that assume the role of the Combined Forces Command staffs of the two opposing alliances.



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OBJECTIVES/PURPOSE:

To aid players' understanding and appreciation for:

- a. The principles of war in a theater warfare exercise.
- b. Air Force doctrine in a theater warfare exercise.
- c. The concepts of air campaign planning.
- d. The synergistic effect of well-integrated air, space and land component plans.
- e. The command and staff relationships involved in combined operations.
- f. The importance, capabilities and limitations of intelligence and logistics functions relative to force application in a theater of operations.

GENERAL INFORMATION:

- a. Wargame Sponsor: Joint Services Command and Staff College, Wing Commander Kevin Duell, SO1-C, JSCSC Swindon, Berkshire SN68TS, United Kingdom, +44 (0) 1793 788261.
- b. Wargame Director: Lt Col Greg Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- c. . Alternate Game Director: Lt Col Tim Gunnoe, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6532.
- d. Participants: JSCSC students (including officers from many other nations), supplemented by students from the Netherlands Defense College and the Swedish Air Force Staff College, fill CFC staff roles. The JSCSC Directing Staff simulate the roles of higher authority and syndicate facilitators. Air Force Wargaming Institute personnel are game controllers and operate the ACES model for combat resolution.

- e. Frequency and Duration: Pegasus-UK is conducted annually each January and February. The wargame requires 10 working days for preparation and execution.
- f. Wargame Location: Joint Services Command and Staff College, Watchfield, Berkshire, United Kingdom.
- g. Supporting Models and Simulation Tools: Pegasus-UK employs the tactical interface unit of the ACES model, a generic computer adjudication tool. The model permits two-sided wargaming for multiple, simultaneous, independent wargames. The AFWI controllers use the ACES computer model to simulate combat and provide feedback to participants via on-screen and printed reports. Participants analyze ACES output to continue or alter their campaign plans.

WARGAME EXECUTION:

Approximately 90 participants are divided into seven Blue and seven Red syndicates pitted against each other in seven simultaneous and independent games. The game covers one day of prewar maneuvering followed by four days of computer-adjudicated warfare. Throughout the week, actual British media representatives conduct live “radio” and “television” interviews with key participants as an enhancement to the exercise.

The game begins with the development of theater campaign plans by opposing syndicates. During this planning phase, an additional 80 maritime students from the JSCSC provide component inputs. Assuming roles as commanders and their staffs, participants develop strategy, evaluate enemy intent and capability, posture forces and determine logistical requirements to sustain combat operations. Computer-generated map displays and hard-copy status reports provide intelligence support.

Once the campaign plan is complete, participants move to the execution phase of the wargame, making air, land and sea order inputs on personal computers using the Graphical User Interface (GUI) software. Participants assign aircraft packages to accomplish offensive, defensive, interdiction, reconnaissance, airspace control and support missions. They accomplish land moves by entering land unit orders for maneuver, reinforcement and fire. Students are also given the opportunity to request certain space-based assets.

After player moves are finalized at the end of the day, their inputs are adjudicated using on-site software. Map displays and hard-copy status reports are updated to provide battle damage assessment and current intelligence. Armed with the previous move’s results, syndicates continue the game cycle by returning to the planning phase where they either continue or modify their campaign plan and enter a new set of inputs, as they deem appropriate. After the last day of battle, syndicates debrief their campaign plans and provide insights into their successes and failures.

WARGAME DATES:

27 Jan - 14 Feb 2003.

SOLO CHALLENGE (SC)

WARGAME SUMMARY:

Solo Challenge (SC) is the capstone wargame of the Air War College (AWC) academic year and includes the study of leadership, doctrine, strategy, political/military joint/combined warfare, air and space power and technology. It provides AWC students with the opportunity to demonstrate their ability to translate national-level decisions into operational-level action. During SC, participants are forced to manage ongoing global crises and a homeland security scenario while confronted with projected limits on force structure and overseas basing. This wargame is conducted at the unclassified level.



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OBJECTIVES/PURPOSE:

Each student will synthesize the principles, concepts and processes taught in the AWC curriculum and apply them during a strategic and operational-level wargame. The objectives include:

- a. Understand the national planning systems and process in relation to crisis action decision-making at the strategic and operational level.
- b. Examine courses of action that integrate diplomatic, military, informational and economic methods.
- c. Analyze US interests and evaluate potential courses of action and their likely impact on American interests.
- d. Analyze regional political situations, including economic, religious, cultural and historical factors.
- e. Internationally, be prepared to work in a coalition environment.
- f. Address war termination issues and factors that convert military victories into political successes.

GENERAL INFORMATION:

- a. Wargame Sponsor: Air War College, AWC/CC, Maxwell AFB AL.
- b. Warlord: Col Mac Sikes, Air War College, AWC/DFW, Maxwell AFB AL, DSN: 493-8116.
- c. Wargame Director: Lt Col Ron Sweat, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6169.

- d. Contractor Lead: Mr. Davis Cooper, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6556.
- e. Participants: AWC students are the wargame participants, with AWC faculty acting as mentors and respective national leadership.
- f. Frequency and Duration: Solo Challenge is conducted annually at the end of the academic year. The exercise, including training and preparation, covers 10 days.
- g. Wargame Location: Students play this wargame at the Air Force Wargaming Institute.
- h. Supporting Models and Simulation Tools: Accelerated Combat Timeline (ACT), ForceView, Joint Educational Mobility Model (JEMM) and Decision, Support and Information Management System (DSIMS) facilitate wargame execution.

WARGAME EXECUTION:

Solo Challenge begins with four days of crisis action planning followed by four days of campaign plan execution. The wargame is divided into five separate and independent worlds. Each world is comprised of five student cells: a political, a military, a functional command and two regional cells.

WARGAME DATES:

30 April – 9 May 2003.

THEATER CAMPAIGN WARFARE (TCW)

WARGAME SUMMARY:

Theater Campaign Warfare (TCW) is the capstone of the School of Advanced Air and Space Studies. The wargame is augmented by participation of students from the School of Advanced Military Studies (SAMS) at Fort Leavenworth, KS; the Naval Operational Planning Course (NOPC) at Newport, RI; and the School of Advanced Warfighting (SAW) at Quantico, VA, to develop greater cross-service appreciation of theater operational issues. The game is based on a seminar service students an opportunity for synthesis through the application of concepts they have developed during the past year. Students should evaluate the efficacy of their classroom concepts using the wargame as one of the data points in their continuing education and develop a greater cross-service appreciation of theater, strategic and operational issues. The game consists of four parallel but independent seminars and includes planning, execution and analysis phases, lasting five days. Educational objectives are facilitated by game moves covering periods varying from a few days to several weeks.



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OBJECTIVES/PURPOSE:

During the planning phase, students are provided the opportunity to recommend victory conditions (diplomatic, political and military objectives) for resolution of a crisis and develop a strategic plan to achieve those objectives within both established political constraints and the realities of a given tactical, operational, logistical and coalition situation. This opportunity includes the following specific areas of investigation relative to campaign planning: (1) the role of center of gravity and vulnerability analysis, particularly in an environment that includes the presence of weapons of mass destruction; (2) the role of cultural expectations and norms; (3) the operational characteristics of air, sea, land, amphibious and space forces and the ways in which these characteristics may be synergistically integrated; (4) the characteristics of coalition warfare; (5) the role of the military in achieving political and national objectives with acceptable risks and costs.

During the execution phase, students are provided the opportunity to evaluate various scenarios from a strategic and operational framework. This opportunity includes the requirement to make specific recommendations and decisions related to the following features of strategic planning and campaign direction: (1) responses to evolving political and strategic scenarios, unexpected enemy actions, changes in requirements of coalition members and unanticipated results of our own actions (The essential issue here is the extent to which the original campaign plan can be followed and the extent to which it requires adjustment in light of the fog and friction of war.); (2) dealing with war termination issues; (3) the impact of Military Operations Other Than War (MOOTW) and other humanitarian, political, ethnic, religious and social concerns.

During the analysis phase, students are provided the opportunity to relate the events of the wargame to learning in their institution's curricula. Issues that may be addressed include the following:

(1) comparisons and contrasts between the wargame and historical examples; (2) the role of leadership and other human factors; (3) interrelationships among theory, doctrine, technology and organization; (4) relationships among the political, strategic, operational and tactical perspectives of war; (5) the influence of cultural and geographic factors; (6) the particular dynamics of warfare in which weapons of mass destruction are employed; (7) the utility of analytical tools in the design and execution of campaigns; (8) the impact of information war capabilities in future warfare.

GENERAL INFORMATION:

- a. Wargame Sponsor: School of Advanced Air and Space Studies, SAASS/CC, Maxwell AFB AL.
- b. Warlord: Lt Col John Terino, School of Advanced Air and Space Studies, SAASS/AS, Maxwell AFB AL, DSN: 493-5499.
- c. Wargame Director: Mrs. Terry Young-Brinston, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6536.
- d. Contractor Lead: Mr. Brent Chapman, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6835.
- e. Participants: SAASS/SAMS/NOPC/SAW students are the primary game participants, with CADRE personnel providing an opposing Red Team. The faculty and CADRE personnel provide a control team for game adjudication and portray the SECDEF staff, Theater Combatant Commander and Joint Task Force Commander and staff.
- f. Frequency and Duration: The wargame is conducted annually over a five-day period, which includes student in-briefs and a campaign planning briefing.
- g. Wargame Location: Air Force Wargaming Institute, Bldg 1406, Maxwell AFB AL.
- h. Supporting Models and Simulation Tools: TCW is a computer-assisted, manually adjudicated wargame. The Accelerated Combat Timeline (ACT) model, the ForceView mapping tool and the Joint Educational Mobility Model (JEMM) are used to support game execution. The ACT is used to assist in the exploration, analysis and adjudication of courses of action. Theater Campaign Warfare uses the ForceView mapping tool to show troop disposition and potential troop movement. The JEMM is a deterministic, personal computer (PC)-based transportation feasibility estimator depicting the strategic lift from port of embarkation (POE) to the port of debarkation (POD) and produces an integrated multiple theater of war TPFDD-like document.

WARGAME EXECUTION:

As mentioned earlier, the wargame is divided into planning, execution and analysis phases. During the planning phase on days one and two, students will develop strategy recommendations and COAs for the combatant commander and present them to the SECDEF staff played by the faculty. During the

execution phase on days three and four, the students will do an assessment of combat results, recommend campaign plan modifications and discuss end-state and war termination issues. During the analysis phase on day five, students will present an analysis of the results of the wargame and relate the results to their curriculum. The faculty will also present findings and observations.

WARGAME DATES:

24-28 Feb 03.

PEGASUS-Australia

WARGAME SUMMARY:

Pegasus-Australia is an unclassified computer-assisted, level wargame developed by the Air Force Institute and used by the Australian Defence College. The simulation models the first days of war between two. The ADC divides participants into Blue and Red teams the role of the combined command staffs (CCS) of the opposing alliances.



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OBJECTIVES/PURPOSE:

To aid players' understanding and appreciation for:

- a. The decision-making environment of the Joint Forces Air Component Commander (JFACC).
- b. The impact of JFACC decisions on a theater commander's campaign plan.
- c. The synergistic effect of well-integrated air, land and sea component commander plans.
- d. The Integrated Tasking Order (ITO) planning cycle.

GENERAL INFORMATION:

- a. Wargame Sponsor: Australian Command and Staff Course, Weston Creek, Australia, commercial phone 61 2 6266 0359.
- b. Wargame Director: Lt Col Greg Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- c. Alternate Game Director: Mr. Keith Morris, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6537.
- d. Participants: Australian Command and Staff Course students.
- e. Frequency and Duration: PEGASUS-Australia is conducted annually each October. The wargame requires 21 days for preparation and execution.
- f. Wargame Location: Australian Defense College, Australian Capital Territory, Australia.
- g. Supporting Models and Simulation Tools: Pegasus-Australia employs the tactical interface unit of the ACES model, a generic computer adjudication tool. The model permits two-sided wargaming for multiple, simultaneous and independent wargames. The AFWI controllers use

the ACES computer model to simulate combat and provide feedback to participants via on-screen and printed reports. Participants analyze ACES output to continue or alter their campaign plans.

WARGAME EXECUTION:

Approximately 50 participants are divided into Blue and Red syndicates pitted against each other. The game covers one day of prewar maneuvering followed by four days of computer-adjudicated warfare.

The game begins with the development of theater campaign plans by opposing syndicates. Assuming roles as commanders and their staffs, participants develop strategy, evaluate enemy intent and capability, posture forces and determine logistical requirements to sustain combat operations. Computer-generated map displays and hard-copy status reports provide intelligence support.

Once the campaign plan is complete, participants move to the execution phase of the wargame, making air, land and sea order inputs on personal computers using the ACES model's tactical-level Graphical User Interface (GUI) software. Participants assign aircraft packages to accomplish offensive, defensive, interdiction, reconnaissance and airspace control and support missions. They accomplish land moves by entering land unit orders for maneuver, reinforcement and fire. Students are also given the opportunity to request certain space-based assets.

After player moves are finalized at the end of the day, their inputs are adjudicated using the ACES model. Map displays and hard-copy status reports are updated to provide battle damage assessment and current intelligence. Armed with the previous move's results, syndicates continue the game cycle by returning to the planning phase where they either continue or modify their campaign plan and enter a new set of inputs, as they deem appropriate. After the last day of battle, syndicates debrief their campaign plans and provide insights into their successes and failures.

WARGAME DATES

29 Sept- 17 Oct 2003.

Air Force Command Exercise System (ACES) and Accelerated Combat Timeline (ACT)

MODEL SUMMARY:

The Air Force Command Exercise System (ACES) is the largest, most advanced and most versatile computer-driven wargame model provided by the Air Force Wargaming Institute. It is a joint, theater campaign-level combat simulation model used by the AFWI to support capstone wargames played by Air Force, Army, Navy, Marine Corps, and international officers attending professional military education (PME) schools. The ACES focuses on the operational level of war--the level of war at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theaters. The ACES simulates large-scale, highly detailed, joint and combined force combat operations. Forces modeled include air forces, ground units and naval assets. The ACES computer model is typically used in theater-level wargames in which the participants are assigned to teams in the roles of combined force command and staff members during the first days of a notional war. Each team develops its own theater campaign plan and executes its plan by directing force apportionment, logistical movements and mission tasking. Game moves are made via computers using an advanced graphical user interface (GUI). The ACES computer model performs combat adjudication responding to each individual team's air, ground and naval orders.



There are two GUIs that can interact with the ACES model: a tactical-level interface and an operational-level interface. The tactical-level interface accepts tactical inputs from the player. Some examples of orders given with this interface are airplane packages, time-on-target assignment and move orders to individual brigade-level units. Additionally, the tactical interface can “jump” no longer than 48-hours down the combat timeline per game cycle. The operational-level interface consists of software designed to satisfy two requirements: provide computer adjudication to operational-level wargaming and allow wargaming for all phases of warfare, from initial deployment to end-state determination. The operational-level interface allows wargamers to address the strategic and operational levels of war. It allows rapid time jumps from 1-30 days or more to allow for a more accurate portrayal of combat and allows a user to move towards a desired end state. The AFWI continues to refine the ground and naval portions.

The ACES model is a generic computer adjudication tool and must have a theater specific database. Theater scenarios and databases exist for Korea (Dragon), Southwest Asia (Phoenix) and two fictional geographic settings (Pegasus and Atlantis). The model permits two-sided wargaming for multiple, simultaneous, independent wargames. Air Force Wargaming Institute controllers use the ACES computer model to simulate combat and provide feedback to participants via on-screen and printed reports. Participants analyze outputs, then continue or alter their campaign plans.

MODEL CUSTOMERS:

During the 2003 wargaming season, ACES will be used to support Air and Space Exercise, Blue Thunder, Theater Campaign Warfare, JLASS, the Joint Services Command and Staff College (UK), and the Canadian Forces College (CFC). Descriptions of each of the wargames/exercises that use the ACES model are included in this compendium.

OBJECTIVES/PURPOSE:

The ACES combat simulation model aids a warfighter's understanding and appreciation for:

- a. The principles of war in a theater wartime exercise.
- b. Air Force doctrine in a theater wartime exercise.
- c. The concepts of air campaign planning.
- d. The synergistic effect of well-integrated air, land and sea component plans.
- e. The command and staff relationships involved in combined operations.
- f. Intelligence and logistics functions relative to theater force application.

MODEL EXECUTION:

GENERAL INFORMATION:

- a. The ACES program manager is Lt Col Gomez, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6219.
- b. The ACT program manager is Lt Col Kelly Hill, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-5061.
- c. The ACES/ACT project manager is Capt Jon DiLeo, Air Force Wargaming Institute, CADRE/WGTD, DSN: 493-1231.
- a. The Atlantis project manager is Capt Jon DiLeo, Air Force Wargaming Institute, CADRE/WGTD, DSN: 493-1231.

ForceView

MODEL SUMMARY:

ForceView is a PC-based mapping tool built by the Wargaming Institute (AFWI) in support of AFWI-wargames. It is a multi-day visualization tool for and editing military order of battle and force ForceView's strengths as a wargame-tailored system are and unique airpower visualization. Usability features click/drag, drag/drop, multiple selection, multiple-level and several other features common to today's PC-based Usability is a vital issue in AFWI- sponsored wargames, to two factors: (1) limited training time available for controllers and players and (2) high-paced wargames mapping tool with a simple, yet effective, user interface. ForceView's airpower visualization is also uniquely tailored for wargaming. Airbases are displayed with callout boxes that provide tailorable details on aircraft totals for each base. Totals can be presented by unit, type or category and can be filtered down in efforts to reduce screen clutter and provide the user with the specific information needed.



Air Force sponsored displaying disposition. its usability include undo/redo applications. primarily due arriving requiring a

ForceView is used to meet a variety of mapping and visualization needs within AFWI. The original intent behind its creation was to provide a "digital" map display for operational and strategic-level wargames in efforts to move away from the outdated magnet/wall-hanging map paradigm. ForceView's versatile design has allowed it to be used in tactical computer-adjudicated wargames such as those using ACES and ACT as well. ForceView has also been provided for use at the Navy War College.

MODEL CUSTOMERS:

OBJECTIVES/PURPOSE

MODEL EXECUTION:

Unclassified, PC-based mapping tool tailored for wargaming.

- a. Used in wargames hosted for the various PME schools/courses at Maxwell AFB AL (e.g., Joint Warrior; Joint Land, Aerospace and Sea Simulation; Solo Challenge; Theater Campaign Warfare; Air and Space Exercise and Blue Thunder).
- b. Displays disposition of forces over multiple days.
- c. Supports distributed wargaming outside AFWI, providing players read-only scenario viewing over the Internet.
- d. Preferred over commercial off-the-shelf (COTS) mapping tools for strategic and operational-level wargaming due to its ease of use and effective means of visualizing air and space power.

- e. Designed with usability considerations such as click/drag, drag/drop, multiple selection and multiple-level undo/redo. Usability is a key factor considering the limited training time prior to the game and limited editing time during the game.
- f. Imports data from other AFWI models.
- g. ForceView's versatile design allows it to be a front-end editing tool for a variety of databases and models.

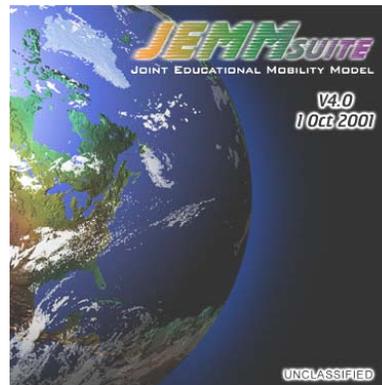
GENERAL INFORMATION:

- a. The ForceView program manager is Maj Jim Alexander, Air Force Wargaming Institute, CADRE/WGOO, DSN 493-6638.
- b. The ForceView project manager is Capt Jon DiLeo, Air Force Wargaming Institute, CADRE/WGTD, DSN: 493-1231.

Joint Educational Mobility Model (JEMM)

MODEL SUMMARY:

The Joint Educational Mobility Model (JEMM) is a theater logistics model that simulates strategic force deployment. The JEMM is a completely re-engineered version of the Deployment model; it was designed to replace and predecessor. The JEMM acts as a vehicle to help understand the capabilities and limitations of the United project forces in support of national interests. Students realistic international situation forcing them to go planning and execution process necessary to deploy troubled area. The JEMM is a Windows®-based with pull-down windows and point and click capability. from JEMM, a force flow, can be linked directly to the ACES model to populate the model with forces for ACES-based, computer-driven wargames. The JEMM output can also be used as a stand-alone deployment estimator for manual and computer-assisted wargames. Improvements upon the predecessor Shark model include the ability to generate a single, comprehensive force flow for two nearly simultaneous major theater wars (MTWs); easier, more intuitive user interface; faster execution with the ability to stop and restart execution; and the ability to close or degrade ports or strategic bottlenecks (such as canals, straits, airfields, etc.).



PC-based deployment. older Shark improve its students States to are given through the forces to the program The output

MODEL CUSTOMERS:

The JEMM model is used to generate force flows for numerous AFWI wargames and exercises.

OBJECTIVES/PURPOSE:

The JEMM model aids a warfighter's understanding and appreciation of:

- a. The decision-making process of developing and implementing a course of action (COA) in response to a potential crisis.
- b. The impact and importance of the deployment process on the execution of our national response.
- c. The capacity of sea and strategic airlift assets and the transit times associated with those assets.
- d. The allocation process of deploying assets to maximize performance.

MODEL EXECUTION:

The JEMM models the deployment phase of United States forces in support of a notional international crisis. It estimates the feasibility of closure dates requested by the user for strategic unit movement. Game participants develop a deployment plan or COA in response to the emerging crisis. The COA is evaluated by JEMM to determine the amount of time required for deployment, the availability status of units at any given date and the availability of strategic transportation assets. Available units, aircraft and port data are provided to reflect the appropriate future game environment. Participants will then execute the COA by selecting individual units, their port of embarkation (POE), the mode of transportation and their port of debarkation (POD). Participants then oversee the deployment process by selecting movement criteria for each unit. Port throughput capacities can be degraded to simulate the effect of hostile activities.

After units and shipping points are selected, participants execute the transportation feasibility estimator (TFE) of the program. This loads the selected units on available aircraft and ships and delivers them to their POD. The model determines unit arrival dates by analyzing available aircraft and ship cargo capacity, port capacity, passenger capacity, processing times and ramp space.

Participants can review the results of the TFE analysis and obtain the projected arrival dates for all COA units. The TFE projection will also indicate both location shortfalls and unused transit points. Problem units that did not arrive by their latest arrival date are identified, along with a possible cause. The POE and POD throughput and passenger utilization rates are analyzed and charted for each location. Remaining capacity is also identified by date for the entire mobilization period. Participants may try to optimize assets and eliminate the bottlenecks by modifying the COA to maximize existing capacity.

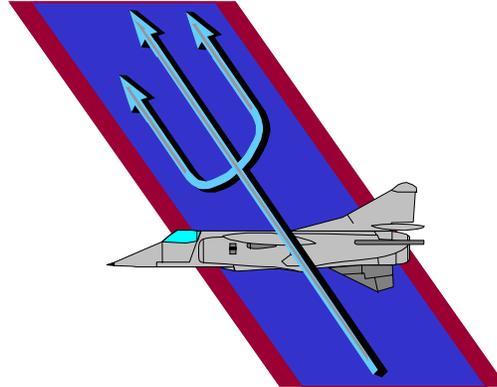
GENERAL INFORMATION:

- a. The JEMM program manager is Lt Col Ron Sweat, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6169.

Atlantis

MODEL SUMMARY:

Atlantis is an unclassified computer-assisted space employment model. The model is forces only and simulates combat at the high low operational levels of warfare. Sponsors employ the Atlantis model as a capstone to leadership concepts taught throughout Squadron School (SOS). Specifically, the wargame the students the concepts of group problem organization, communication, team building, leadership and followership. It has an ancillary the students to learn about employing air and power. Currently, two basic scenarios are available for use with the Atlantis model. Both scenarios represent fictitious landmasses known as “Atlantis” or “Pisces.” Capable of multiple turns, the model runs on linked personal computers. The sponsor (faculty in most cases) can interpret results with minimal AFWI controller support. Atlantis-based wargames use a common combat model with scenario databases that can be modified to meet the specific requirements of the game sponsor.



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MODEL CUSTOMERS:

The Atlantis model supports the capstone wargame conducted at Squadron Officer School. A description of the Squadron Officer School exercise is included in this compendium.

OBJECTIVES/PURPOSE:

As a capstone exercise, Atlantis is geared toward allowing the students to demonstrate problem solving and group dynamics via a predominantly air and space-based scenario by:

- a. Organizing student participants to meet assigned tasks.
- b. Establishing logical problem-solving methods for handling various situations, including time-sensitive and multitasked events.
- c. Demonstrating strong leadership and strong followership.
- d. Developing methods for them to accomplish effective communications between the various players.

MODEL EXECUTION:

GENERAL INFORMATION:

- b. The Atlantis model program manager is Maj Al Fragala, Air Force Wargaming Institute, CADRE/WGOO, DSN: 493-6637.