

JOINT EXPEDITIONARY FORCE EXPERIMENT 2000



MEDIA KIT

WHAT IS THE JOINT EXPEDITIONARY FORCE EXPERIMENT?

JEFX is a Chief of Staff of the Air Force (CSAF)-sponsored experiment that combines live forces, models, simulations, and technology insertion to create a realistic warfighting environment to explore and evaluate new and promising technologies and processes.

JEFX provides the Air Force a vehicle for experimentation with operational concepts and technologies that enhance capabilities of the 21st Century Aerospace Force. It is a broader effort to implement Joint Vision 2020, exploit the Revolution in Military Affairs and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the joint force commander.

WHY EXPERIMENTATION?

The United States Air Force Scientific Advisory Board's (SAB) report on United States Air Force Expeditionary Forces, Volume 1: Summary, SAB-TR-97-01, November 1997, supports the concept of JEFX experiments. The SAB report specifically addresses EFX 98; however, its intent applies to all large-scale experiments in general.

The SAB explicitly addressed exercises and experiments. A sampling of the report's recommendations indicates a strong encouragement for JEFX to accomplish several things. First, validate battlespace awareness, directing the collection of intelligence and information in support of forward operations to the maximum extent possible. Second, validate distributed JFACC concepts through "reach back;" and third, demonstrate the feasibility of substituting GPS-based navigation for precision approach radars to enable a "reach back" ATC concept. Additionally, the report recommends validating the use of precision navigation, position, and timing as well as conducting lean sustainment and force protection experiments.

HISTORY

An Air Force Command and Control (C2) summit was conducted 11 April 1997 to examine recommendations by the C2 Task Force to determine the future of Air Force C2. The C2 Task Force introduced a proposed air and space C2 vision and actions required to move Air Force C2 into the 21st Century. The Air Force's senior leadership agreed to four major items at the summit:

- The C2 air and space vision
- Manage C2 as a weapon system

- Implement evolutionary acquisition for C2 systems
- Changes to programs to start achieving the C2 vision.

As part of managing C2 as a weapon system, it was determined that a C2 lead agency should be established to serve as the Air Force focal point to pull Air Force C2 together across all MAJCOMs. Primarily, the agency would:

- Integrate air and space C2
- Eliminate duplication of effort
- Drive toward commonality
- Build an aerospace C2 roadmap to lead Air Force C2 into the 21st Century.

The CSAF directed the Commander of Air Combat Command to establish the Aerospace Command and Control & Intelligence, Surveillance and Reconnaissance Center (AC2ISRC). The CSAF directed the AC2ISRC to develop and manage a series of experiments called Joint Expeditionary Force Experiment, to explore emerging technologies, processes and requirements to strengthen Air Force capabilities into the next millennium.

The Air Force Experimentation Office was also established in the same order to synchronize the experimentation process across the Air Force and to be the focal point for the Air Force's contribution to joint experimentation. The AFEO will also coordinate experimentation activities in JEFX, exercises, wargaming, and the Air Force battle labs, and facilitate the assessment of each of those activities to ensure an integrated process for Air Force experimentation and prevent duplication of effort.

Through a partnership between the AFEO, AFC2TIG, the Electronic Systems Center at Hanscom AFB, all Air Force Major Commands, numerous federal agencies, and industry, EFX 98 became the Air Forces' first large-scale experiment. With a focus on distributed operations, it explored the ability to move information while deploying fewer people and less equipment to maintain the situational awareness of our commanders and fighting forces as they deployed to forward areas of operations. JEFX 99 built upon the lessons learned in the '98 experiment to better integrate our space partners and space resources into the expeditionary aerospace operations. It also attempted to integrate our coalition partners into AOC operations.

The focus of this year's experiment will be Agile Combat Support and Time-Critical Targeting that provides more capability to the Joint Force and to the Combined Forces Air Component Commander. JEFX 2000 will again be operated in a distributed and collaborative environment.

JEFX 2000 DESCRIPTION

JEFX 2000 is an opportunity to discover better ways to accomplish Air Force missions in a joint/combined environment. JEFX 2000 provides a realistic environment of simulations and live-fly forces into which advanced technology and innovative processes are introduced and evaluated to determine their potential for enhancing Air Force Core Competencies. This environment is created from 35 individual models, simulations and simulators at 11 sites nationwide and is combined with approximately 260 individual live-fly aircraft sorties flown over the Nellis AFB ranges. This will create a dynamic and exciting operational environment for our warfighters to explore the 45 process and technology initiatives that fall under five mission areas:

- Agile Combat Support initiatives to support and protect our troops in the field.
- Global Mobility to transport and sustain Aerospace Expeditionary Forces
- Time Critical Targeting capabilities to strike the right targets at the right time and in the correct sequence to achieve the desired effect.
- ISR Battle Management to give commanders timely battle space information
- Joint Battlespace Infosphere initiatives designed to turn data into knowledge for the warfighter

MILLENNIUM CHALLENGE 00

JEFX 2000 is part of the U.S. Joint Forces Command's Millennium Challenge 00 joint warfighting experiment that includes the Army's Joint Contingency Force Advanced Warfighting Experiment, the Navy's Fleet Battle Experiment Hotel, and the Marines Corp's Millennium Dragon large-scale experiment.

MAJOR OPERATIONAL NODES FOR JEFX 2000

There are a number of sites and nodes across the continental United States and the Pacific theater all connected through an electronic “Global Information Grid” network. They include:

The Combined Air Operations Center (CAOC) at Hurlburt AFB, FL that will simulate an Aerospace Operations Center that has been deployed to an overseas location and will host the Combined Force Air Component Commander and his air operations command and control functions.

The Combined Air Operations Center-Forward (CAOC-F) at Nellis AFB, NV that will be the focal point for prosecuting time critical targeting as an extension of the CAOC.

Deployed Expeditionary Operations Center (EOC), also at Nellis AFB consisting of wing-level command and control elements of an Air Expeditionary Force that plan and execute missions tasked by the CAOC through the Air Tasking Order (ATO).

The Warfighter Support Center at Langley AFB, VA will serve as the primary reach back node in the experiment’s distributed operations scenario. It will provide the majority of the Air Force Forces (AFFOR) support functions in collaboration with CAOC AFFOR personnel.

The Tanker Airlift Control Center at Scott AFB, IL manages worldwide airlift and tanker support and integrates missions into the combat theater.

The Air Force Space Operations Center, at Vandenberg AFB, CA integrates support from space sensors and communications satellites and knowledge of the adversaries’ space capabilities into CAOC operations.

The Air Intelligence Agency at Kelly AFB, TX and the Air Force Weather Agency at Offutt AFB, NE provide intelligence and weather information to the distributed operations network and integration into ATO planning and execution.

JEFX 2000 COMPREHENSIVE INITIATIVE SUMMARY

Initial PACAF Operations Support Center (POSC) Response in Regional Crisis

The proposed PACAF process initiative is designed to validate the communications systems and procedures associated with several new organizations, as well as to validate procedures and demonstrate equipment associated with coordinating agile combat support requirements for forces deploying from, or operating within, the PACAF AOR.

Distributed ACS Operations

Agile Combat Support (ACS) focuses on readying, preparing, positioning, employing, sustaining, and recovering forces. The existing approach for ACS C2 organizes separate and distinct combat support staffs to track and manage these six functions. This process initiative experiments with distributed operations for a full scale Combat Support Center (CSC).

Distributive SOF C2

This initiative experiments with collaborative tools and processes to facilitate distributed operations between SOF Command and Control nodes.

Intelligence, Surveillance and Reconnaissance Battle Management (ISRBM)

This proposed initiative will assess a baseline for all ISR Battle Management processes and procedures.

Joint Battlespace Infosphere Management (JBIM)

This process initiative addresses the operationalizing of information management using an Info Management Ops Cell (IMOC).

Battle Control Center (BCC)

This process is an experiment of the Air Control Squadron (ACS) modernization roadmap. The initiative reduces manpower and equipment requirements and decreases the ACS deployment footprint. This initiative also introduces shared responsibility of time-critical-targeting (TCT) prosecution with the CAOC.

Time Critical Targeting (TCT)

This process initiative is a carryover from JEFX 99. Its purpose is to develop concepts of operation to take advantage of the tactical situation and to make necessary adjustments to counter unanticipated enemy actions/reactions.

Collaborative Beddown Planner (CPB)

The Collaborative Beddown Planner extends the demonstrated functionality of BCAT (Beddown Capability Assessment Tool) so that users can access BCAT functionality across the Internet or SIPRNET and share their assessments and plans in a collaborative environment.

Combat Support & Force Protection Command & Control (CSC2)

The focus of this initiative is to provide a computer-based situational awareness tool to the combat support function.

Joint Assistant for Deployment and Execution (JADE)

JADE will demonstrate a means for rapidly planning the deployment of an Air Expeditionary Force (AEF).

Logistics Simulation and Analysis Model (LogSAM)

Evaluate the Logistics Simulation and Analysis Model (LogSAM). This tool provides improved real-time analysis and predictability of critical war fighting resources by providing a rolling estimate of the sortie production capacity of deployed operating units.

GCSS-AF Combat Ammunition System (CAS)

This experiment demonstrates the ability to provide essential real-time munitions and other asset availability data directly to the warfighter into the Air Operation Center (AOC) to improve the development of a fully executable Air Tasking Order (ATO).

Automated Data Upload Process for Quick-Reaction Site Surveys

This initiative will develop, test, and evaluate an automated process for collecting, transmitting, and uploading airfield site survey information using the Survey Tool for Employment Planning (STEP) system.

Joint Weather Impacts System (JWIS)

JWIS addresses the process and technology required to provide and automate weather support to the mission planning and execution process.

Civil Engineer Beddown and Ability to Survive and Operate (CEB & ATSO)

We intend to improve agile combat support for expeditionary forces. We will test beddown software and equipment for quick beddown at reduced transport sorties. We will also test more responsive passive defense measures to save lives and continue the mission in a chemical and/or biological warfare environment.

War Reserve Material Capability Assessment (WRM-CA)

WRM-CA was designed to reduce the logistical footprint of deploying units by locating, identifying, and allocating WRM to units deploying for contingency operations.

Wing-level Information for Parts Prediction (WIPP)

Several Laboratory technologies have been combined to create a logistics command and control demonstration tool for wing-level logistics commanders. The tool provides logistics commanders with real-time flight line status information, complete equipment and parts tracking, and an advanced simulation capability that supports proactive decision making rather than reactive problem solving.

Identification/Course of Action Analysis-Medical Surveillance in an AEF and the Identification of a BW/CW Event

Clinical data is gathered in the medical application and aggregated from across the AOR. Real-time analysis is performed on a "rolling 24-hour" basis and the symptom array is mapped to a backdrop of symptom patterns of biowarfare agents. An alert is generated when the spatial or temporal patterns of the data indicate suspect activity.

Virtual Airline Airfield Manager (AFM)

Supports the Air Expeditionary Force concept at theater destination airfields by allowing priority missions to take priority when needed; minimize or eliminate wasted arrival/departure aircraft slots; make reallocation of takeoff and landing slots more manageable; and provide visibility over congestion problems and their solutions.

Expeditionary Integrated Flight Management (EIFM)

The purpose of the EIFM initiative is to add an advanced flight following, electronic filing, and route optimizing capability to the Advanced Computer Flight Planning (ACFP) system to maximize peacetime efficiency, war time capability, fuel efficient routes, maximum payloads, and to provide near real-time flight following.

Integrated Information for Global Reach (IFGR)

Demonstrates the integrating and enabling advanced technologies required to provide continuous, seamless exchange of Joint mobility- and Special Operations-related C2, enroute mission planning, medical C2, and precision airdrop information among fixed, airborne, and deploying/deployed elements.

Deployable Consolidated AMC Mission Planning System (CAMPS)

This initiative focuses on providing AMD planners with a deployable capability to manage, rapidly build missions, and efficiently schedule critical in-theater air mobility assets against transportation requirements supporting AEF, joint services, coalition, commercial, and refugee theater operations.

Time-Phased Force Deployment Data (TPFDD) In An Hour-JEFX 2000 Enhancements

This initiative focuses on the enhancement of software developed for the EFX 99 TPFDD In An Hour (TIAH) initiative. These enhancements support rapid and efficient planning of deployment, redeployment, and sustainment Air Expeditionary Force (AEF) operations through TPFDD development automation and tailoring of unit type codes (UTCs).

Integrated Collection Management Advanced Concept Technology Demonstration (ICM-ACTD)

This initiative will demonstrate a significant new capability and reengineered collection management processes that will allow diverse national, theater, and tactical collection systems to be dynamically focused in support of Joint Task Force (JTF) operations.

NIMA Support to the Warfighter

This initiative for JEFX 2000 consists of three parts: National Imagery and Mapping Agency In-a-Box for Leveraged Exploitation (NIMBLE); Tasking, Processing, Exploitation And Dissemination (TPED) and Web Based Imagery Needs Statement (WINS). NIMBLE will improve USAF units' access to and timeliness of delivery of NIMA's products and services. TPED will enhance the collection, exploitation, dissemination and fusion of imagery data into a managed, interoperable information environment for the Warfighter. WINS extends the Requirements Management System's current SCI-level protocols for collection research and tasking applications to the collateral level. It allows operations planning and execution in support of the primary tenets of JV 2010 and JEFX-2000 concepts.

Dynamic Moving Target Information Exploitation (DMTIX)

DMTIX will demonstrate the ability of a Broadsword MTIX system installed on Joint STARS test aircraft T-3 and at the Rear and Forward AOCs to receive, integrate, and exploit GMTI and make these products available to participating operators and the TBMCS. DMTIX will leverage intelligence preparation of the battlespace (IPB) and Dynamic Battle Management (DBM).

Integrated Space-Based and Airborne Hyperspectral Imaging (HSI) Sensors

Hyperspectral imaging (HSI) sensors support military operations by providing battlespace awareness, particularly intelligence preparation of the battlefield, threat assessment, and combat search and rescue.

Enhanced Intelligence Data Analysis System for Spacecraft (IDASS-E)

Leverages from the Air Force research Laboratory's Advanced Technology Demonstration, the Intelligence Data Analysis System for improved picture of the mission payload status, threat, health and on-orbit damage assessments of both hostile and friendly space objects.

Broadcast-Request Imagery Technology Experiment (BRITE)

BRITE is an innovative use of mostly existing capabilities to provide rapid notification of newly collected national imagery and provide the operator in the field with the means to request and receive full resolution subimages in a very timely manner at the secret level, without dependence on limited C2 comm.

Cooperative Cross-Platform SIGINT Geolocation

This initiative leverages national and Joint C4ISR connectivity to provide a common and shared operational picture and joint total asset visibility.

Overhead OPELINT Geolocation, User Interface

This initiative provides a capability to plan, coordinate, and execute real-time Operations Electronic Intelligence (OPELINT) geolocation by managing national systems and integrating airborne systems into the tasking scheme.

Vulnerability Assessment and Risk Management (VA/RM) Experiment for Info Assurance

A defensive counterinformation operations team will assess the security posture of the JEFX 2000 information infrastructure first without, and then with, the USAF VA/RM tool-set and will document a proposed "most secure infrastructure" for each scenario.

Trusted Transfer Agent for Reach Down (TTA4RD)

This initiative enables US personnel operating in the US SECRET ONLY enclave to search and retrieve products residing in the COALITION enclave. It brings together two Air Force sponsored systems to deliver secure access to distributed information sources across multiple security levels.

Master Caution Panel (from JEFX 99)

Implements a process to keep the CFACC and his staff current on the status of their AOC C2 weapon system on a near-real-time basis.

Joint Battlespace Infosphere "Wright Flyer" (JBIwf)

The Joint Battlespace Infosphere (JBI) is a combat information management system originally described in the 1998 USAF Scientific Advisory Board (SAB) study "Information Management to Support the Warrior." The JBI gathers battlespace data from a wide variety of sources and integrates this data into battlespace information. This battlespace information is aggregated and distributed in the appropriate form and at the appropriate echelon and thus transformed into battlespace knowledge

Joint Applications for Speech Technology (JAST)-Theater Air Planning (TAP)

Speech recognition technology can enhance an operator's performance and reduce training time; it is faster, more intuitive and less constraining. The speech-enabled software for this initiative includes an operational version of the Theater Battle Management Core Systems (TBMCS) Theater Air Planning (TAP) application.

Mission Analysis Tracking and Tabulation System/Integrated Targeting Environment (MATTS/ITE)

MATTS/ITE is a web-based system currently in use in USAFE. MATTS/ITE will significantly improve access to the battle space infosphere and provide a COP for theater and CONUS shared situational awareness via a distributed database through a single web portal.

Bomber Enhanced Tactical Interface (BETI)

The proposed initiative provides tactical displays, data processing and datalink systems to bomber aircrews.

Attack Operations Decision Aid (AODA)

Enables operators to monitor Situational Awareness and JFACC guidance, plan engagement options selecting from available assets, execute against TCTs, then assess the results; leverages space-based sensor information and COMM infrastructure.

TBMCS/ABCS Interoperability

Establish an electronic bridge of bi-directional data between the Joint Air Operations Center's (JAOC's) Theater Battle Management Core System (TBMCS) and Army Battle Command System (ABCS). Synchronizing the theater's precision engagements and fires in near-real-time to yield the situation awareness required to effectively tailor and efficiently apply combat power in a dynamically fluid environment.

JEFX 2000 "LIVE-FLY" PLAYERS

ORG

TYPE

BASE

53WG	A-10 F-15E F-15C F-16CJ F-16CG HH-60 HH-60	NELLIS EGLIN/NELLIS EGLIN/NELLIS EGLIN/NELLIS
938RQW	HH-60	NELLIS
28 BW	B-1	KIRTLAND
366WG	F-15E	ELLSWORTH
162FW (ANG)	F-16	MT. HOME
49FW	F-117	TUCSON, AZ
552ACW	E-3	HOLLOMAN
93ACW	E-8	TINKER
55WG/AFMC	RC-135	ROBINS
9RW	U-2	OFFUTT
509 BW	B-2	BEALE
		WHITEMAN
917WG (AFR)	B-52	BARKSDALE
ASC	GH	EDWARDS
57WG	PREDATOR	INDIAN SPRINGS
AFMC	TWIN OTTER	
SWC	SPACE BASED RADAR	
23FG	A-10/OA-10	POPE
AMC	C-130	
AFRL	C-135	
AFR	F-16	FT. WORTH NAS
AFMC	TWIN OTTER	
NASA	WB57	ELLINGTON, TX
(OTHERS)		
USN	EA-6B	WHIDBEY ISLAND
AFMC	EC-130H	PALMDALE, CA
366WG	KC-135	MT HOME
AMC	KC-135	MacDILL/GRAND FORKS
AFSOC	MC-130E	HURLBURT
ANG	EC-130	HARRISBURG, WV
USA	AH-64	
USMC	F-18	MCAS MIRAMAR
USN	A-3	

ACRONYMS

ABCS	Army Battle Command System
ACTD	Advanced Concept Technology Demonstration
AEFB	Air Expeditionary Force Battle Lab
AEW	Air Expeditionary Wing
AFRL	Air Force Research Laboratory
AFWA	Air Force Weather Agency
AIA	Air Intelligence Agency
AMASS	ATO Modeling & Simulation System
AMC	Air Mobility Command
AMD	Air Mobility Detachment
AODA	Attack Operations Decision Aid
ARSPC	Army Space Command
ASAP	Aggressor Space Application Processor
ATO	Air Tasking Order
BCC	Battle Control Center
BCD	Battlefield Coordination Detachment
BDA	Battle Damage Assessment
BLOS	Beyond Line-Of-Sight
C2IPS	Command and Control Information Processing system
CAESAR	Coalition Aerial Surveillance and Reconnaissance
CAOC	Combined Air Operations Center
CAP	Crisis Action Planning
CEC	Cooperative Engagement Capability
CERT	Computer Emergency Response Team
CFACC	Combined Force Air Component Commander
COP	Common Operational Picture
COTS	Commercial-Off-The-Shelf
CSC	Combat Support Center
CT	Collaborative Tool
CTF	Combined Task Force
CVW	Collaborative Virtual Workspace
DIGMAS	Distributed Information Gateway Management System
DII COE	Defense Information Infrastructure Common Operating Environment
DIW	Defensive Information Warfare
DPS	Dynamic Precision Strike
EBO	Effects Based Operations
ECS	Expeditionary Combat Support
EFX	Expeditionary Force Experiment
EOC	Expeditionary Operations Center

ESC	Electronic Systems Center
GAMOD	Global Air Mobility Operational Display
GATES	Global Air Transport Execution System
GBS	Global Broadcast System
GCSS	Global Combat Support System
GMTI	Ground Moving Target Indicator
GPS	Global Positioning System
HAE	High Altitude Endurance
HSI	Hyper-Spectral Imagery
HRR	High Resolution Radar
HUMINT	Human Intelligence
HUMRAAM	An AMRAAM mounted on a HUM-VEE (part of JBECC)
IACC	Intelligent Adaptive Communications Controller
IDASS	Intelligence Data Analysis System for Spacecraft
ILC2	Integrated Logistics Command and Control
IO	Information Operations
IOPI	Information Operations Planning Initiative
IPB	Intelligence Preparation of the Battlefield
ISR	Intelligence, Surveillance & Reconnaissance
IW	Information Warfare
IWS	Information Work Space
JAOC	Joint Air Operations Center
JASSM	Joint Air-Surface Stand-off Missile
JBECC	Joint Composite Tracking Network (JCTN) Based Expeditionary Control Center
JDAM	Joint Direct Attack Munitions
JEFX	Joint Expeditionary Force Experiment
JERIS	JFACC Enroute Information System
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JSEAD	Joint Suppression of Enemy Air Defenses
JSF	Joint Strike Fighter
JTF	Joint Task Force
JWIS	Joint Weather Impacts System
KBI	Kenny BattleLab Initiative
MAS	Multi-Asset Synchronizer
MCE	Mission Command Element
MCP	Master Caution Panel
MSCS	Multiple Source Correlation System
NCW	Network Centric Warfare
NIMA	National Imagery & Mapping Agency
NRT	Near-Real Time
NTM	National Technical Means
OSC	Operations Support Center
PAA	Phased Array Antenna
PGM	Precision Guided Munitions

RCC	Radar Control Center
RITV	Remote In-Transit Visibility
RPTS	Rapid Precision Targeting System
SADL	Situational Awareness Datalink
SAR	Synthetic Aperture Radar
SATCOM	Satellite Communications
SBIRS	Space Based Infra-Red System
SBMCS	Space Battle Manager Core Systems
SBR	Space Based Radar
SDS	Sensor-Decision maker-Shooter
SIAM	Space and Information Analysis Model
SIAP	Single Integrated Air Picture
SMC	Space & Missile Center
SOC	Space Operations Center
SOF	Special Operations Forces
SPIDAR	Space Information Distributed Architecture
S-T-O	Space Tasking Order
STO	Special Technical Operations
TACC	Tanker Airlift Control Cell
TADIL	Tactical Digital Information Link
TBMCS	Theater Battle Management Core Systems
TCT	Time Critical Target
TDC	Theater Deployable Communications
TDDS	TRAP Data Display System
TIBS	Tactical Information Broadcast Service
TMD	Theater Missile Defense
TPED	Tasking, Processing, Exploitation, & Dissemination
TPFDD	Time Phased Force Deployment Document
TRAP	Target Relative Azimuth Position
UAV	Unmanned Aerial Vehicle
UHF	Ultra-High Frequency
UTC	Unit Type Code