Boeing To Demonstrate Advanced Communications Capabilities At JEFX '99

Boeing is playing a major role in the U.S. Air Force-sponsored Joint Expeditionary Forces Experiment (JEFX '99) by supplying and integrating key pieces of an overall communications architecture that is being demonstrated on board several aircraft.

Aircraft participating include: Test System 3 (TS-3), an Airborne Warning and Control System (AWACS) test aircraft, two KC-135R tankers acting as en route command centers, and the Commando Solo EC-130E aircraft. JEFX '99 runs from Aug. 28 through Sept. 2 at Langley Air Force Base, Va., Hurlburt Air Force Base, Fla., Mountain Home Air Force Base, Idaho and Nellis Air Force Base, Nev.

JEFX '99 is to demonstrate how emerging command and control capabilities can enhance U.S. forces' ability to decisively halt invading forces. It also expands on the lessons learned from EFX '98 and will integrate more space-based and space-derived capabilities and information into aerospace operations. This year's demonstrations -- involving more than 30 aircraft in "live-fly" exercises at Mountain Home and Nellis -- will focus on new technology to bolster mission effectiveness.

Boeing is providing ground-site communication services through its Seattle-based Prototype Development Facility and Global Mobile Service Center for transfer of wideband and narrowband data via commercial and military satellites. A Boeing phased array antenna system, which can receive large amounts of data and video, is installed on all four aircraft. Additionally, UHF satellite communications systems were installed on three of the aircraft.

The KC-135R aircraft were integrated with several antenna systems for worldwide two-way data/voice communications, worldwide telephone service, and for reach-back communications to B-1B aircraft.

The aircraft contain roll-on/roll-off communications and mission planning pallets. These pallets are equipped with computer workstations networked for in-flight and ground operation, and communications equipment connected to ground stations via satellite. All pallets have network connectivity with one another to enhance command and control and intelligence capabilities in support of Air Expeditionary Forces.

The AWACS test aircraft has leading edge technical improvements that will be needed for AWACS to maintain its role in providing information superiority, and as a key component in the Air Force's Air Expeditionary Force. These prototypes will test the capability of integrating information from multiple sources, automatically improving a warfighter's situational awareness. They form the technical basis for the next series of upgrades to AWACS aircraft.

Systems on-board the KC-135R aircraft will allow the command and mission planning teams to remain apprised of battlefield activities while en route to the crisis area allowing preparation of a battle plan. Information is updated in flight to ensure the commander enroute and mission planners have the most current information available.

The Commando Solo EC-130E serves as an airborne radio and television station that supports operations in world hot spots and natural disaster areas. The Boeing systems installed on the aircraft will allow for direct satellite reception of video while en route or on-station, enabling a rapid response to dynamic world events.

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