

E-8 Joint STARS



This aircraft: USAF E-8C JSTARS—#97-0100—as it looked in 2004 when assigned to 461st Air Control Wing, Robins AFB, Ga.

Introduction of the E-8 in the 1990s gave the Air Force a powerful ISR aircraft able to locate, classify, track, and direct fire against moving ground targets. It was the airborne part of the Joint Surveillance Target Attack Radar System, a project that included Army elements. Grumman (now Northrop Grumman) integrated a huge ground-scanning radar and advanced communications into a modified Boeing 707-300 airframe. The result: real-time battle management for air and ground commanders.

JSTARS evolved from USAF and Army efforts to find better ways to attack Soviet armor. Their programs merged in 1982, with the Air Force as lead. Grumman modified used 707s to carry a 27-foot, canoe-shaped radome slung under the fuselage. It housed a 24-foot side-looking phased array radar. The antenna tilted to either side of the aircraft to conduct wide-area surveillance, fixed-target indication, moving target indication, and target classification. The E-8 could

look out 125 miles and track up to 600 targets simultaneously, differentiating between tracked vehicles and trucks. Mission crew analyzed the radar information and transmitted it to ground stations or other aircraft.

The E-8 achieved initial operational capability in late 1997. However, it was by then already a combat veteran. Two prototypes had starred in the 1991 Gulf War, where they played a key role

in the Battle of Khafji. The two also flew in Joint Endeavor, a 1995-96 NATO peacekeeping mission in Bosnia. Newly operational E-8s again went into action in Operation Allied Force, the 1999 NATO air war against Serbia. Although not publicized, the performance of the E-8s was an airpower triumph of the 2003 Iraq War. E-8s accumulated tens of thousands of combat hours over Afghanistan, Iraq, Libya, and other hot spots.

—Robert S. Dudley with Walter J. Boyne



Northrop Grumman photo

An E-8C JSTARS over Robins AFB, Ga.

In Brief

Designed, built by Grumman, now Northrop Grumman (mission systems) and Boeing (707-300 airframe) ★ first flight (w/radar) Dec. 22, 1988 ★ function, ground surveillance/airborne battle management ★ four Pratt & Whitney TF33 102C turbofan engines ★ AN/APY-7 synthetic aperture radar ★ number built 18 (two E-8As repurposed to E-8C configuration) ★ standard flight crew of four (pilot, copilot, navigator, flight engineer) ★ standard mission crew, 18 specialists ★ max speed 639 mph ★ cruise speed 449 to 587 mph ★ endurance: 11 hrs (unrefueled) ★ weight (max T/O) 336,000 lb ★ span 145 ft 9 in ★ length 152 ft 11 in ★ height 42 ft 6 in ★ ceiling 42,000 ft.

Famous Fliers

Desert Storm: Royce Grones, Mark Neese, George Muellner (Cmdr, 411th Joint Stars

Sq.). **OEF/OIF:** Robert Elder Jr. (Cmdr 8th AF).

Notables: Lori Robinson (Senior air battle manager, US Northern Command; first female combatant commander), Charles Brown Jr., David Fadok. **Test Pilots:** Royce Grones (Chief AF Test Force), Mark Neese.

Interesting Facts

Generates radar field-of-view covering 19,305 square miles ★ deployed twice for combat (Gulf War 1991, Balkans 1995-96) before even reaching IOC ★ capable of locating, classifying, tracking ground vehicles 125 miles distant ★ can track dismounted human targets ★ tested in 1980s on top-secret Tacit Blue experimental aircraft ★ has some limited capability to detect helicopters, rotating antennas, and slow-moving fixed-wing aircraft ★ called “JSTARS” at first, then officially “Joint STARS” ★ uses radar developed by Norden.

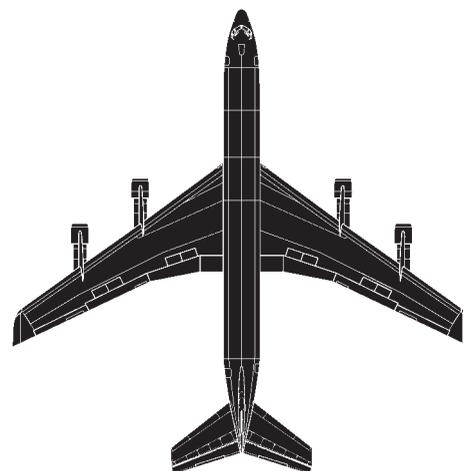


Illustration by Zaur Eylanbekov