



AIR COMBAT COMMAND

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E-8C JOINT STARS

Current as of March 17, 2023



MISSION

The E-8C Joint Surveillance Target Attack Radar System (Joint STARS, or JSTARS) is an airborne battle management, command and control, intelligence, surveillance and reconnaissance platform. Its primary mission is to provide theater ground and air commanders with ground surveillance to support attack operations and targeting that contributes to the delay, disruption, and destruction of enemy forces.

FEATURES

The E-8C is a modified Boeing 707-300 series commercial airframe extensively re-manufactured and modified with the radar, communications, operations, and control subsystems required to perform its operational mission.

The most prominent external feature is the 27-foot long, canoe-shaped radome under the forward fuselage that houses the 24-foot long, side-looking phased array antenna.

The radar and computer subsystems on the E-8C can gather and display detailed battlefield information on ground forces. The information is relayed in near-real time to the Army and Marine Corps common ground stations and to other ground command, control, communications, computers and intelligence (C4I) nodes.

The antenna can be tilted to either side of the aircraft where it can develop a 120-degree field of view covering nearly 19,305 square miles and is capable of detecting targets at more than 250 kilometers. The radar also has the capability to detect helicopters, rotating antennas and low, slow-moving fixed wing aircraft to include surface vessels.

As a Battle Management and Command and Control asset with robust communications and datalink capabilities, the E-8C can support the full spectrum of roles and missions from disaster relief and peacekeeping operations to major theater war.

BACKGROUND

Joint STARS evolved from Army and Air Force programs to develop, detect, locate and attack enemy armor at ranges beyond the forward area of troops. The first two developmental aircraft deployed in 1991 to Operation DESERT STORM and supported Operation JOINT ENDEAVOR in December 1995. In 1996 JOINT ENDEAVOR transitioned to JOINT GUARD.

Joint STARS supported NATO troops over Bosnia-Herzegovina in 1996 and Operation ALLIED FORCE in 1999. Since Sept. 11, 2001, the fleet has flown more than 130,000 combat mission hours in support of operations worldwide, including Operations ENDURING FREEDOM, NOBLE EAGLE, and IRAQI FREEDOM. NEW DAWN was supported in 2010 and ODYSSEY DAWN in 2011. The wing further distinguished itself by leading the charge from 2015-2020 with deployments to FREEDOM'S SENTINEL and INHERENT RESOLVE in support of U.S. Central Command and Counter Narcotics Operations support.

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Team JSTARS, consisting of the Georgia Air National Guard's 116th Air Control Wing, the active-duty 461st Air Control Wing, and Army JSTARS detachment, provides joint airborne command and control, intelligence, surveillance and reconnaissance support over land and water to combatant commanders around the globe. The total force integration unit operates the world's only Joint STARS weapon system based out of Robins Air Force Base, Georgia.



Characteristics

Primary Function: Airborne battle management

Primary Contractor: Northrop Grumman Corporation

Power Plant: Four Pratt and Whitney TF33-102C

Thrust: 19,200 pounds each engine

Length: 152 feet, 11 inches (46.6 meters)

Height: 42 feet, 6 inches (13 meters)

Wingspan: 145 feet, 9 inches (44.4 meters)

Speed: Optimum orbit speed 390 - 510 knots (Mach 0.52 - 0.65)

Ceiling: 42,000 feet (12,802 meters)

Maximum Takeoff Weight: 336,000 pounds (152,409 kilograms)

Range: Nine hours (unrefueled)

Unit Cost: \$244.4 million (fiscal 98 constant dollars)

Crew: Four flight crew, plus 14 Air Force and three Army specialists (crew size varies according to mission)

Date Deployed: 1996

Inventory: 8 (total force)

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