RQ-4 GLOBAL HAWK

Current as of January 24, 2023

MISSION

The RQ-4 Global Hawk is a high-altitude, long-endurance, remotely piloted aircraft with an integrated sensor suite that provides global all-weather, day or night intelligence, surveillance and reconnaissance (ISR) capability.

Global Hawk's mission is to provide a broad spectrum of ISR collection capability to support joint combatant forces in worldwide peacetime, contingency and wartime operations. The Global Hawk provides persistent near-real-time coverage using imagery intelligence (IMINT), and moving target indicator (MTI) sensors.

FEATURES

Global Hawk is currently fielded as the Block 40. Seven Block 10 aircraft were procured, but were retired from the Air Force inventory in 2011. Block 20s were initially fielded with IMINT-only capabilities, and four Block 20s were converted to an EQ-4 communication relay configuration, carrying the Battlefield Airborne Communication Node (BACN) payload. The EQ-4s were retired from the Air Force inventory in 2021. Block 30 is a multi-intelligence platform that simultaneously carries electro-optical, infrared, synthetic aperture radar (SAR), and high and low band SIGINT sensors. Block 30 aircraft could have also been equipped with a multi-spectral sensor in place of the usual payload. Block 30 divested Fiscal Year 2022. Currently the Block 40 carries the Radar Technology Insertion Program (RTIP) active electronically scanned array radar which provides MTI and SAR data. Block 40 Early Operating Capability (EOC) was declared in Sep 2013, IOC was declared August 2016, and the system is currently fielded and supporting operations in every combatant command. RQ-4s have flown in named operations over Afghanistan, Iraq, Syria, and Libya; and supported disaster response efforts in Haiti, Japan, and California.

Global Hawk is flown by a Launch and Recovery Element (LRE) and a Mission Control Element (MCE). The LRE is located at the aircraft forward operating location (FOL) and functions to launch and recover the aircraft while en route to and from the collection area. The MCE controls the Global Hawk for the bulk of the on-station mission. The MCE is manned by one pilot and one sensor operator for missions. Command and control data links enable complete dynamic control of the aircraft. The pilot workstations in the MCE and LRE function as the control and display interfaces (cockpit) to providing aircraft and sensor control, health, and status. From this station, the pilot also communicates with outside entities to coordinate the mission (AOC, air traffic control, airborne controllers, ground controllers, other ISR assets).

The sensor operator workstation provides capability to task the sensor, dynamically update the collection plan in real time, initiate sensor calibration, and monitor sensor status. The sensor operator also assists the exploitation node with image quality control, target deck prioritization and scene tracking to ensure fluid operations.

The system offers a wide variety of employment options. The unmatched range and 30+ hour endurance allow tremendous flexibility in meeting mission requirements. In 2014, an RQ-4 Block 40 flew a 34.3 hour flight, setting the endurance record for longest unrefueled flight by a U.S. Air Force aircraft.

AIR COMBAT COMMAND PUBLIC AFFAIRS
115 Thompson St., Ste 121
Langley AFB, Va. 23665-1987
ACCPA.operations@us.af.mil
757-764-5007
Twitter: @aircombatcmd
Instagram: @aircombatcommand
Facebook: @aircombatcommand

BACKGROUND

Global Hawk began as an Advanced Concept Technology Demonstration in 1995. The system was determined to have military utility and provide warfighters with an evolutionary high-altitude, long-endurance ISR capability. The Global Hawk has been deployed operationally to support overseas contingency operations since November 2001.

In the RQ-4 name, the "R" is the Department of Defense designation for reconnaissance and "Q" means unmanned aircraft system. The "4" refers to the series of purpose-built remotely piloted aircraft systems.

The Global Hawk is operated by the 348th Reconnaissance Squadron at Grand Forks Air Force Base, North Dakota, but aircraft are rotated to operational detachments worldwide. The 319th Operations Group, Detachment 2 provides formal training for all RQ-4 sensor operations and pilots for initial and mission qualifications.

Characteristics

Primary function: High-altitude, long-endurance ISR

Contractor: Northrop Grumman (Prime), Raytheon, L3 Comm Power Plant: Single Rolls Royce AE3007HA1 turbofan engine

Thrust: 8,500 pounds

Wingspan: 130.9 feet (39.8 meters)

Length: 47.6 feet (14.5 meters)

Height: 15.4 feet (4.7 meters)

Weight: 14,950 pounds (6,781 kilograms)

Maximum takeoff weight: 32,250 pounds (14,628 kilograms)

Fuel Capacity: 17,300 pounds (7,847 kilograms)

Payload: 3,000 pounds (1,360 kilograms)

Speed: 310 knots (357 mph)

Range: 12,300 nautical miles

Endurance: more than 34 hours

Ceiling: 60,000 feet (18,288 meters)

Crew (remote): three (LRE pilot, MCE pilot, and sensor operator)

Initial operating capability: 2015 (Block 40)

Inventory: Approximately 34

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