



# FACT SHEET

## U.S. Air Force Fact Sheet WC-135 CONSTANT PHOENIX

### Mission

The WC-135W Constant Phoenix atmospheric collection aircraft supports national level consumers by collecting particulate and gaseous effluents and debris from accessible regions of the atmosphere in support of the Limited Nuclear Test Ban Treaty of 1963.

### Features

The aircraft is a modified C-135B. The Constant Phoenix's modifications are primarily related to its on-board atmospheric collection suite, which allows the mission crew to detect radioactive "clouds" in real time. The aircraft is equipped with external flow-through devices to collect particulates on filter paper and a compressor system for whole air samples collected in holding spheres.



The cockpit crew is from the 45th Reconnaissance Squadron at Offutt Air Force Base, Neb., and special equipment operators are assigned to the Air Force Technical Applications Center at Patrick AFB, Fla.

### Background

General Dwight D. Eisenhower commissioned the Constant Phoenix program on Sept. 16, 1947 when he charged the Army Air Forces with the overall responsibility for detecting atomic explosions anywhere in the world. In September 1949, a WB-29 flying between Alaska and Japan detected nuclear debris from Russia's first atomic test--an event thought not possible until mid-1950.

Beginning in August 1950, WB-50 aircraft were converted for the air-sampling mission over a two-year period. WC-135 aircraft began replacing the WB-50s in December 1965 and became the workhorse of the atmospheric collection program.

Air sampling missions were routinely conducted over the Far East, Indian Ocean, Bay of Bengal, Mediterranean Sea, the Polar regions, and off the coasts of South America and Africa. The WC-135W played a major role in tracking radioactive debris from the Soviet Union's Chernobyl nuclear plant disaster. Currently the air-sampling mission supports the Limited Nuclear Test Ban Treaty of 1963, which prohibits any nation from above ground nuclear weapons testing. WC-135s are currently the only aircraft in the inventory conducting air-sampling operations.

### General Characteristics

**Primary function:** Air sampling and collection operations

**Contractor:** Boeing Aerospace Co.

**Power Plant:** Four Pratt & Whitney TF33-P-5 turbopfans with thrust reversers

**Thrust:** 16,050 pounds each engine

**Wingspan:** 130 feet, 10 inches (39.8 meters)

**Primary function:** Air sampling and collection operations  
**Contractor:** Boeing Aerospace Co.  
**Power Plant:** Four Pratt & Whitney TF33-P-5 turbofans with thrust reversers  
**Thrust:** 16,050 pounds each engine  
**Wingspan:** 130 feet, 10 inches (39.8 meters)  
**Length:** 139 feet, 11 inches (42.5 meter)  
**Height:** 42 feet (12.8 meters)  
**Weight:** 120,170 pounds (54,508 kilograms)  
**Maximum Takeoff Weight:** 300,500 pounds (136,304 kilograms)  
**Fuel Capacity:** 130,000 pounds (58,967 kilograms)  
**Speed:** 403 miles per hour (350 knots)  
**Ceiling:** 40,000 feet (12,192 feet)  
**Range:** 4,000 nautical miles  
**Crew:** Varies with mission  
**Unit Cost:** unavailable  
**Initial operating capability:** December 1965  
**Inventory:** Active force, 2; ANG, 0; Reserve, 0

**Point of Contact**

[Air Combat Command](#), Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: [accpa.operations@langley.af.mil](mailto:accpa.operations@langley.af.mil)

September 2007