

A high-angle, close-up photograph of an SR-71 Blackbird reconnaissance aircraft in flight. The aircraft is dark, sleek, and positioned in the lower right quadrant of the frame, flying towards the left. The background is a vast, rugged mountain range with significant snow cover, viewed from a high altitude. The sky is a deep, clear blue. The overall composition emphasizes the aircraft's speed and the scale of the terrain it is flying over.

For more than 30 years, the SR-71 has been in a class all its own.

Photography by Ted Carlson

Retired by the Air Force in 1990, resurrected by Congress in 1994, and declared mission-ready on Jan. 1, 1997, the SR-71, known around the world as the Blackbird, flew for the last time—once again—as an Air Force operational aircraft on Oct. 10, 1997. This time the last flight came without fanfare—on its first retirement an SR-71 set four new world records.

As in its first operational life, the SR-71 was flown by crews from the 9th Reconnaissance Wing (originally, the 4200th SRW), based at Beale AFB, Calif. The two refurbished jets (#64-17971 and #64-17967) were operated by the 9th RW's Det. 2, located at Edwards AFB, Calif. A Presidential line item veto on Oct. 14, 1997, killed funding for the SR-71 program, which DoD has maintained was too expensive.

Blackbird





Unknown at the time to pilot Maj. Bert Garrison and backseater Capt. Dom Ochotorena, their routine training sortie (left) on Oct. 10 at Edwards AFB, Calif., marked the final sortie for the "Habu," as the SR-71 has been known to its operators, maintainers, and intelligence cohorts since its first operational use in 1967. The nickname came from Okinawa residents, who shouted "Habu, Habu," when they first saw the sleek black jet flying around the island. They thought it resembled an indigenous hooded viper, called the Habu. It was and is the world's fastest, highest flying production aircraft. It can fly more than three times the speed of sound (2,000 mph) and routinely cruises at altitudes in excess of 80,000 feet (15 miles).

Achieving and maintaining such speed and altitude requires a unique aircraft—one able to stand extreme heat and pressure. Maintenance personnel—at times as many as 14—require up to 30 hours to prep the airplane before a sortie. In addition to other tasks, they pore over every inch, checking fasteners and the titanium skin twice.



The maintenance burden is just as great between sorties—maintenance man-hours run into the hundreds per flight hour. At left, buckets help catch leaking fuel—a routine sight, since the fuel tanks form the exterior skin of the Blackbird. During flight as the sleek jet and its special JP-7 fuel warm up, the leaks stop. JP-7 is a low vapor pressure fuel that does not boil off even at temperatures of up to 300°.

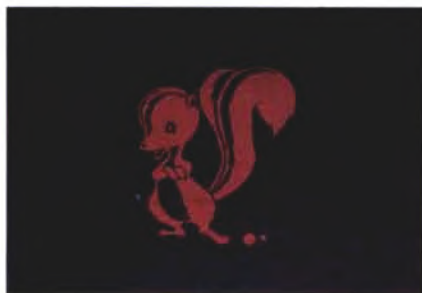


Since takeoff with a full JP-7 fuel load was not practical, Habu crews relied on their cohorts in KC-135Ts to top off the jet's six main fuselage tanks. The "T" designation—before reengining of the KC-135s, it was "Q"—tankers are used solely for the SR-71s. Tanker crews have to be certified to refuel the black jets under a radio-silence procedure. Additionally, the KC-135Ts have special plumbing for their fuel tanks which allow them to move JP-4 and JP-7 between various tanks. The tankers themselves can burn either JP-4 or JP-7. The SR-71s, in a pinch, can also burn JP-4 or JP-5, but doing so limits the Blackbird to Mach 1.5. The one-of-a-kind JP-7 also serves as a coolant for the aircraft and various components. The KC-135T (above and right) is from the 92d Air Refueling Wing at Fairchild AFB, Wash.





Designed before the computer revolution and built in secrecy, the SR-71 and its forerunner, the A-12, are technological marvels. The A-12, which was developed by the Lockheed Skunk Works for the CIA under an August 1959 contract, first flew on April 26, 1962. Early A-12 flights were limited to Mach 1.5 until completion of the J-58 engine from Pratt & Whitney. With two J-58s, each producing 32,500 pounds of thrust with afterburner, an A-12 flew at Mach 3 for the first time on July 20, 1963. President Lyndon B. Johnson revealed the existence of the A-12 on Feb. 29, 1964. Shortly after, on July 24, 1964, he announced the Air Force was developing the SR-71. The A-12 was a single seat jet designed to take photographs from directly overhead. The SR-71, on the other hand, has a pilot and Reconnaissance Systems Officer, carries far more reconnaissance equipment, and provides peripheral coverage while flying in international airspace.





T-38 airplanes have been used for years to maintain SR-71 pilot proficiency. Flight time in the Blackbird is expensive and, subsonic, the T-38 flies and handles in ways similar to the SR-71. The T-38s also fly "pace chase" to perform visual external checks on the SR-71s in flight whenever a crew member believes the aircraft has sustained damage. At left, pilot Lt. Col. Tom McCleary takes one more look at the Habu as Garrison and Ochotorena take #967 through its paces on Oct. 10.

The SR-71 first flew on Dec. 22, 1964. Beale received its first Blackbird on Jan. 7, 1966. The USAF inventory grew to 32. All were based at Beale, but the SR-71 also flew from detachments at Okinawa and in the United Kingdom. During their first 25 years, the Habu flew several thousand operational sorties, many over Cuba, Vietnam, and the Middle East, as well as flights skirting the Soviet Union and China. The SR-71 can provide coverage of 100,000 square miles within just one hour—the resolution is good enough to see a person's shoelaces.



The SR-71 set numerous records, which crews maintain were done within normal operating regimes. One Blackbird (#64-17972) flew from New York to London on Sept. 1, 1974, at 1,817 mph in 1:54:56.4, which cut three hours off the previous record. It set another record when it flew from London to Los Angeles in 3:47:35.8 on Sept. 13, 1974. Then in July 1976, SR-71s set still more absolute and world class records: speed over a closed circuit, more than 2,092 mph; speed over a straight course, more than 2,193 mph; and altitude in horizontal flight, more than 85,069 feet.

To fly near the edge of space, where the atmospheric pressure is so low that fluids boil at body temperature, Habu crews wear a customized pressure suit. At right, physiological support technicians assist RSO Ochotorena into his suit. Once aboard the aircraft and secured inside their suits and helmets, the pilot and RSO breathe 100 percent oxygen. Until strapping into the cockpit, the two crew members carry portable liquid oxygen converters to breathe and stay cool.



Technicians inflate the pressure suits prior to each flight to check for leaks, but during flight the crews wear the suits uninflated. If there's a loss of cabin pressure at 80,000 feet or above, the suit inflates. At left, technicians strap pilot Garrison into the cockpit.

At right, Garrison and Ochotorena are just visible. During the first operational life of the Habu, there were 93 USAF pilots and 89 USAF RSOs. Six members, now all lieutenant colonels, from the original SR-71 crews took up the Habu mantle again. The Air Force asked original crew members still on active duty to volunteer for the reactivated aircraft to form the nucleus for a new force. The six are pilots Gil Luloff, Tom McCleary, and Don Watkins, and RSOs Blair Bozek, Mike Finan, and Jim Greenwood. The crew member with the most SR-71 flying time was retired, now deceased, RSO Lt. Col. Joseph T. Vida who accumulated 1,392.7 hours.





Following the first deactivation, several SR-71s headed for museums around the country. On the last flight, March 6, 1990, pilot Lt. Col. Ed Yeilding and RSO Vida flew from California to Washington in SR-71 #64-17972, destined for the National Air and Space Museum. On the way, they set four world speed records. Despite the end of the latest operational venture, the Blackbird continues to fly. NASA has employed two of the jets, on loan from the Air Force since 1991, as testbeds for high-speed, high-altitude aeronautical research conducted by NASA's Dryden Flight Research Center, Edwards AFB, Calif. Tests under way now using the Habu are designed to lead the way for technology for the X-33, the Lockheed Martin VentureStar Reusable Launch Vehicle—incredibly stretching the more than 30-year-old Blackbird lore another generation at least. ■

