

## **The WB-47 Weather Planes**

*From "The B-47 Stratojet Centurion of the Cold War"*

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American-based B-47s were unable to hit targets in the Soviet Union without being refueled. The refueling tracks for mid-west based B-47s stretched across the vast across remote regions of Canada from Edmonton, eastward to Goose Bay. Knowledge of weather conditions over this area was therefore critical. To obtain this information, fifteen B-47Es were converted to perform the dual functions of weather and photo-reconnaissance. The conversion was accomplished on the production line at the Boeing Wichita plant and these aircraft were designated RB-47Ks. In 1955, the first "K" as well as all the subsequent aircraft, was assigned to the 343d SRS of the 55th SRW at Forbes AFB, KS.

The 343rd's mission was limited to flying weather reconnaissance over the Canadian refueling tracks, but they did not fly the Ptarmigan weather route from Eielson, Alaska toward the North Pole. However, Military Air Transport Service (MATS) WB-47Es did fly the Ptarmigan route after MATS acquired the B-47 in 1963. The B-47Ks were not involved in collecting nuclear debris following nuclear tests of the Soviet Union or China.

The RB-47Ks flew two routes out of Forbes. Whopper "A" over Hudson Bay which was an eight hour mission and Whopper "B" which was a twelve hour mission and involved aerial refueling. The Whopper "B" went north from Forbes and upon reaching the Canadian border, changed to pass north of Goose Bay. On reaching the point north of Goose Bay, the heading was Changed toward the Atlantic for a short distance after which the course was reversed toward Forbes. The altitude on the outward leg was 16,000 feet and 36,000 feet on the return leg. Walter Savage, who was an AC with the 343rd, stated the Whopper missions were flown every day of the year.

On both missions, upon crossing into Canada the copilot would begin taking observations every twenty minutes and transmitted the information hourly to a ground station when conditions permitted. The copilot's horizontal observations included those relating to the clouds, temperature and visibility. The radiosonde obtained the vertical weather characteristics, which consisted of temperature, humidity, and pressure as it, descended; this information was transmitted to the mother ship. On the WB-47E , the information was recorded on a drum and after landing it was sent to the meteorologists for analysis.

In October 1962 several RB-47Ks were deployed to Brize Norton were they participated in the gathering of intelligence data on the Soviet super H-Bomb detonation off Novya Zemlya.

In 1962, during the Cuban missile crisis, the RB-47K was used for photo reconnaissance. They photographed circling Soviet ships in the Atlantic following the declaration of a blockade... i.e. quarantine by President Kennedy. Weather satellites, the deactivation of B-47 wings, funding constraints, and the assumption of weather reconnaissance by the Air Weather Service brought about the retirement of the RB47K in 1963, ending SAC's involvement in flying weather reconnaissance.

In 1954, a disastrous hurricane led Congress to authorize the conversion of a B-47B for hurricane research. In 1956, General Precision Laboratories modified a Stratojet with equipment to obtain weather information while penetrating hurricanes, and to perform other weather duties. This aircraft was designated a WB-47B and was assigned to the 55th WRS at McClellan, where it flew weather research missions from 1956-58. In 1960, it was used to check the accuracy of the Tiros 11 weather satellite. It remained with the 55th until 1963 when it was replaced by the WB-47E and sent to the Air Training Command.

During the fifties, the Air Weather Service was involved in both hurricane/ typhoon reconnaissance and the collection of nuclear debris from nuclear tests in the Pacific and in the U.S. In 1959, in economy move the Air Force revealed a plan to abolish the weather squadrons. However in 1960 the operating commands of the Air Force, the nuclear sampling agencies, and the Reconnaissance Panel of the Force Estimate Board opposed the deactivation of the weather squadrons, and the deactivation of the weather squadrons was cancelled. On April 1, 1962, the Air Weather Service became the single service manager for all atmospheric weather sampling for DOD. AWS was also given the responsibility to provide weather reconnaissance in support of Joint Chief of Staff (JCS), Headquarters USAF, and the National Meteorological Service. The Air Weather Service was also tasked to support the world wide mission requirements from the Atomic Energy Commission, the Defense Atomic Support Agency, Headquarters USAF, and the Public Health Service.

At the conclusion of the Cuban Missile crisis, the retirement of the B-47, which was temporarily halted, was resumed. B-47s were now available for other duties and the Air Weather Service of the Military Air Transport Service (MATS) selected the B-47 as its first jet weather-reconnaissance aircraft. As part of the transfer, SAC would also provide MATS with experienced B-47 crews. Thirty-four B-47Es were to be assigned to the 9th Weather Wing at McClellan AFB, CA., but they had to be modified before they could perform the weather reconnaissance mission. Lockheed Georgia was awarded the contract for the aircraft and the Freize Instrument Division of the Bendix Corporation supplied the meteorological equipment. The conversion provided for weather collection in both the horizontal and vertical planes.

Dick Purdum, who served with the 55th WRS at McClellan, stated that about \$1,000,000 was spent on each aircraft. The refueling receptacle, the tail defensive armament, wing tanks, and bombing computer were all removed. The gross operating weight of the SAC B-47E, which was over 220,000 lbs., was reduced to 167,000 lbs. The lower gross weight compensated for the loss of the wing tanks allowed the WB-47E to routinely fly 3,000-mile missions. Dick Purdum stated that the performance of the WB-47E as configured for AWS was akin to that of a fighter. The operating gross weight of the weather B-47E approached that of the B-47A, which was 157,000 lbs. The navigational capability of the weather B-47 was greatly enhanced by the addition of AN/APN-70 Loran, CP I 88A/ASN-6 latitude and longitude computer, AN/APN - 1 02 Doppler radar, AN/APN - 42A radar altimeter, and N - I compass. This equipment would provide the actual position of the aircraft when the observations were made, as well as the wind, and the altitude above the terrain and the altitude above the terrain.

The radiosonde dispenser carried carry nine radiosondes that were mounted in

the tail compartment of the aircraft where the gunnery system was formerly located. In the bomber B-47, the copilot also served as the gunner whereas in the WB-47 the copilot served as the MET (Meteorological) Officer. He was responsible for making the horizontal cloud observations, controlling the release of the radiosondes, and the transmission of weather data to ground stations.

The copilot's former fire control panel was transformed into a MET Control panel which consisted of an observer control input array, an analog clock, a data handling bank, radiosonde controls, a total temperature indicator, and radio transmitters. The copilot's cloud observations were manually inserted into the input array while all other horizontal weather observations were automatically recorded including location, wind direction and speed, radar altitude, indicated air speed, total temperature and time. These observations were converted from analog to digital inputs by the data handling bank and then stored on a magnetic tape in the recorder reproducer. The copilot relayed both the horizontal and vertical weather data by selecting either the HF or liaison transmitter and turning the power switch on.

The atmospheric research equipment (ARE), a euphemism for nuclear debris sampler, collected air samples at two different locations. Externally mounted airfoils located in the rear of the bomb bay, collected gaseous samples, which were pumped into high-pressure bottles. The other system, located forward of the entrance hatch, had an intake the size of a silver dollar. Components of the collection system included a U-1 foil system, 1-2B foil system, B-400 rate meter, and a gaseous collection system. The control panel for the collection equipment was located on the navigator's left side wall and was operated by a Special Equipment Operator (SEO) of the Air Force Technical Applications Center (AFTAC). An instructor navigator normally occupied this position. However, William Scott, an SEO who flew in the B-47, was not thrilled by flying next to the honey bucket, at having no ejection seat, and being required to wear a bulky parachute back pack. (Fourth crewmembers normally would unbuckle their chutes in flight and would buckle up when safety required them to.)

The WB-47Es were assigned to the 55th WRS at McClellan AFB, CA; 54th WRS (The Typhoon Chasers) at Anderson AFB, Guam; 53rd WRS (Hurricane Hunters) at Hunter AFB, GA; 56th WRS at Yakota Air Base, Japan; and Det. # I of the 55th WRS at Eielson AFB, Alaska; 9th Weather Wing at McClellan AFB, CA. Det. # I at Eielson flew the Ptarmigan route toward the North Pole.

The WB-47E entered service in 1963 as the RB-47K was retired. The operational debut of the AWS Stratojet occurred on June 6, 1963 when a 55th WRS bird flew a mission from McClellan to Hickam. The first typhoon reconnaissance mission was flown on October 26, 1963.

In November 1963, a WB-47E provided weather reconnaissance support for a fighter deployment to Turkey. On the return flight home, the WB-47E crashed in the Azores. Dick Purdum provided the following information regarding the accident: Departing Turkey on November 11, the aircraft headed for the Azores where it was to refuel. Over the Atlantic electrical power was lost to the aircraft's navigational equipment, and clouds precluded taking celestial observations or heading checks. When the crew finally decided they were lost, they

obtained a HF/DF steer from Lajes. Heading toward Lajes they were again thrown off course by an inaccurate whiskey compass. With the aide of another HF steer, they again headed for Lajes but were also running low on fuel. The aircraft ran out of fuel on the final approach, plowing through the rock walls which protected the small farm plots from the ever-present strong winds. It landed 1775 feet off the end of runway 34. The aircraft was a total loss but there were no crew fatalities. Equipment failure was deemed to be the primary cause of the accident, but a contributing factor was the crew's inability to recognize the impact that the loss of navigational equipment had on their ability to reach the Azores

Unfortunately MATS suffered its second casualty on April 21, 1964 when a WB-47E crashed on takeoff at Eielson killing the Flight Evaluator, Navigator, and the Special Equipment Operator. The aircraft commander and the copilot were badly burned but survived. The crash occurred at a slight rise in the middle of the runway, which caused the aircraft to bounce into the air. Instead of holding the aircraft down the AC attempted to pull the aircraft into the air thereby stalling it. The AC was a newly checked out AWS pilot with little experience in the B-47.

The first hurricane mission occurred on August 28, 1964, when a WB-47E flew into hurricane Cleo. The Stratojet, with its flexible wings and higher operating altitudes, was not well suited to hurricane penetration and this task fell to the WB-50s and the WC-130s. Dick Purdum stated that his task was to fly above the hurricane and pinpoint its location. On one occasion he penetrated the wall cloud on the way to fly above the hurricane and pinpoint its location. On one occasion he penetrated wall cloud on the leading edge of the hurricane, flew into the eye with its dead calm ocean, and then punched his way out the other side.

In 1965, six WB-47Es were assigned to the 57th WRS at Hickam to support classified missile and satellite recovery operations down-range from Vandenberg Air Force Base. In all probability, the satellite recovery operations involved the retrieval of Corona photo reconnaissance packages ejected from the satellite. These packs were snared by C-119s as they floated down to earth, while the missile tests may have involved shots into the Kwajalein lagoon. In addition, the squadron supported JTF-8 operations and weather reconnaissance for deploying TAC aircraft. Fighter aircraft were now routinely flying across the Pacific to support the ever-increasing American involvement in Vietnam. These aircraft had to be refueled, and knowledge of the weather in the refueling areas was critical. (Bird names identified the originating base where the weather reconnaissance mission was flown from. i.e. Eielson Ptarmigan, Hickam Loon, etc.) A "Loon Alpha" mission would be flown every other day between Hickam and Eielson. A "Pathfinder" mission was timed so that the last weather observation was relayed to the command responsible for fighter launch twelve hours prior to takeoff. "Scout" missions were timed so that the aerial observation of the refueling area occurred three-and-one half-hours prior to take off of the fighters. Det #1 flew a complimentary reconnaissance mission from Eielson to McClellan.

Despite having entered service with MATS only in 1963, four WB-47Es were retired in 1965 and three in 1966. In the two years of operation with the Air Weather Service, the WB-47Es were first in flying their programmed flying hours surpassing the WB-50, RB-57B/C, RB-57F, WC-130, and WC-135.

In July of 1966, Det. # 2 of the 57th WRS was established at Clark Air Base, Philippines to provide weather scout reconnaissance for the air refueling tracks utilized by SAC B-52 Arclight and KC-135 Young Tiger operations in SEA. The reconnaissance mission was flown over both tracks, one which was North of Clark and the other South of Clark. The scout relayed the track with the best weather to Guam. Det. # 2 flew two missions a day until it was deactivated on November 30, 1969, along with its parent unit at Hickam. Hunter AFB, the home of the 53rd WRS, was closed shortly after receiving its B-47s and the squadron was reassigned to Ramey AFB, Puerto Rico.

Sampling missions were an integral part of every weather mission. Dick Purdum stated that on missions out of Eielson they headed North at an initial altitude of 18,000 feet 500MB level, later climbing to 30,000 feet 300MB and finally climbing to 39,000 feet and 200 MB for the remainder of mission. Short of the North Pole the aircraft turned back toward Eielson. If a significant hot field was detected by the SEO, they were authorized to track the field across Canada. Running low on fuel, they would land at Goose Bay where they would crew rest and hopefully follow the hot field across the Atlantic to the UK where they would land. The mission ended there, as flights over Europe were not authorized. At the conclusion of the mission, the aircraft was washed down to decontaminate it and the radiation detection badges worn by the crew members were checked to detect the radioactivity to which they had been subjected. The data collected on this mission was used to determine the nature of the triggering device, the weapon yield, the progress in weapon development, and a myriad of other information relating to the exploded weapon. The principle customers for the data, which they had gathered, were the Air Force Tactical Applications Command, AFTAC, and the United States Atomic Energy Detection System, USEDS. Dick also flew a less esoteric sampling mission when he flew through the clouds of an exploding volcano over Central America. It can be assumed that similar sampling missions were also flown out of Yakota, Japan. These missions were highly classified and crews were forbidden to talk about them.

In 1965, a WB-47E crew flying on a Ptarmigan flight set a record as it approached the North Pole, their aircraft being the first B-47 to fly over 5,000 hours. This aircraft had exceeded the projected hour life of the B-47 following the Milk Bottle modification in 1958.

In the summer of 1969 Gary Clairmont attempted to land at McClellan after completing a mission when his forward main landing gear became locked in the intermediate position. All attempts to lower it proved futile and Gary elected to make a belly landing on a foamed runway. He landed the aircraft safely with a minimum of damage without injury to the crew. For his superior airmanship Gary was presented with the MAC Outstanding Individual Safety Award. Gary's landing was a repeat of Jim Riley's belly landing on Anderson AFB, Guam in July 1962.

All WB-47s were retired in 1969, and two WB-47s made their way to air museums. After Ramey was closed, WB-47E #51-2360 was flown on July 26, 1966 to the New England Air Museum at Bradley International Airport, Windsor Locks, CT. In the fall 2003, the aircraft was moved to Hill AFB, UT. In the fall of 1969, # 51-7006 was flown

from Hickam via McClellan to the Museum of Flight in Seattle where its livery was changed to that of a B-47E. ( It has since fallen into disrepair and was in a poor condition in 2002.) Dick Purdum and Tiny Maim flew the last operational flight of a WB-47E on October 24, 1969. 51-2362 had just completed periodic depot maintenance at Douglas/Tulsa, and was essentially a new aircraft when they flew it to the bone-yard at Davis Montham.

1969 was the year in which the B-47 was retired from operational service in the Air Force; eighteen years after the first B-47A was assigned to the 306th BW at MacDill AFB in May 1951. From 1963 to 1969 the WB-47E served in Air Weather Service first as a part of MATS and then later of Military Airlift Command, MAC. It was an outstanding performer in MAC as it had been with SAC. Only two crashes, one in 1963 and one in 1964 involving the WB-47Es were recorded while the aircraft served with the AWS; the fatal crash at Belson in 1963 and the crash in the Azores due to running out of fuel. It was not too shabby a record for an obsolete aircraft that was difficult to takeoff and land.

