The B-47 *Stratojet* Association

B-47E

The B-47E in formation

The B-47E was the major production version of the Stratojet. A total of 1341 B-47Es were built - 386 by Lockheed, 264 by Douglas and 691 by Boeing.

The B-47E was basically the standardized production version of the Stratojet, and incorporated many innovations that had been suggested by experience with the B-47B. It standardized on six General Electric J47-GE-25 engines, which offered a static thrust of 7200 pounds with water injection. These engines had already been refitted to several B-47Bs. The 18 unit internal JATO system was retained on early models, but was soon replaced by a jettisonable rack that contained 33 1000 lb. static thrust units that could be dropped following takeoff. The B-47E was fitted from the start with an approach chute to increase drag and a brake chute to decrease the landing roll. An anti-skid braking device was also fitted.

The armament was changed to two 20-mm cannon in the tail. The A-5 fire control system that had taken so long to develop was finally fitted. The A-5 fire control system was much better than the discarded B-4 system of earlier versions, and could automatically detect and track pursuing aircraft and aim and fire the 20-mm cannon. The earlier B-4 system could at best spray machine gun fire in the general direction of an attacking plane, without much prospect of actually scoring a hit.

The nose section of the B-47E incorporated as standard equipment an in-flight refueling receptacle for flying-boom midair refueling on the starboard side of the nose. The use of in-flight refueling capability enabled the total fuel capacity to be reduced to 14,610 gallons, including two 1700-gallon drop tanks carried underneath the wings between the engine nacelles. The crew was finally provided with ejection seats as standard equipment, with the pilot and co-pilot ejecting upward over the tail and the bombardier/navigator ejecting downward through a hatch in the lower nose.

The undersurfaces and lower portion of the fuselage of most B-47Es were painted a glossy white to reflect the heat radiation from nuclear blasts. This reflective paint was applied retroactively to some B-47Bs.

The first B-47E flew on January 30, 1953, and the Air Force accepted this plane in February. By mid year, 127 similar production examples had been delivered. The first B-47Es went in April of 1953 to the 303rd Bomb Wing based at Davis-Monthan AFB in Arizona. The next recipient of the B-47E was the 22nd Bomb Wing at March AFB, California, retiring their B-47Bs to the Air Training Command.

By mid 1953, peak B-47 procurement was expected to reach almost 2200, but was cut by 140 in September of 1953. A further production cut of 200 aircraft considered in October was prevented in favor of a 20 month production stretch-out during the period in which the B-52 production line was getting up to speed. In contrast to the B-36 program, which was on the verge of cancellation several times, there was never a significant effort to cancel the B-47 program.

The B-47E rapidly became the dominant component of the USAF strategic deterrent during the mid and late 1950s. By December of 1953, SAC had eight B-47 Medium Bomber Wings. In December of 1954, the SAC inventory counted 17 fully-equipped B-47 wings. By the beginning of 1956, 22 wings had received the B-47, and another five wings were getting ready to convert to the B-47. In December of 1956, SAC had 27 combat-ready B-47 wings, with 1204 combat-ready B-47 crews and 1306 B-47 aircraft assigned.

A modified landing gear allowing heavier takeoff weights appeared on the 521st and subsequent B-47Es, and this configuration was labeled B-47E-II. The first B-47E-II reached the Air Force in August of 1953.

A far stronger landing gear was incorporated on the 862nd and later B-47Es. This configuration was known as B-47E-IV. The IV also introduced the MA-7A bombing radar, the AN/ASP-54 warning radar, and the AN/APG-39 gun-laying radar. The B-47E-IV had a takeoff weight of 230,000 pounds, 28,000 pounds more than previously permissible. This extra weight was largely devoted to extra fuel, enabling the combat radius of the IV to increase to 2050 nautical miles, almost twice the distance demonstrated five years earlier by the first B-47A. The Air Force received its first B-47E-IV in February of 1955. In March of 1955, it was decided that all active B-47s would be brought up to the IV standard.

Spurred by the Suez crisis of 1956, SAC demonstrated its ability to launch a large striking force on short notice when in December more than 1000 B-47s flew nonstop, simulated combat missions, averaging 8000 miles (6952 nautical miles) each over the American continent and Arctic regions.

Early in 1955, the Strategic Air Command requested the B-47 be adapted for low-level bombing, with the aircraft delivering its bomb via the toss-bomb technique. In a toss-bombing attack, the plane enters the run at low altitude, pulls up sharply into a half loop with a half roll on top and releases the bomb at a predetermined point in the climb. The bomb continues upward in a high arc, falling on the target at a considerable distance from its release point.

In the meantime, the maneuver allows the airplane to reverse its direction and gives it more time to speed away to a safe distance from the blast. This technique was adopted because it was thought that high-speed B-47s flying at low level would be less vulnerable to enemy countermeasures. The existence of low-level capable B-47s would mean that a potential enemy would now be faced with threats from both high and low-level attacks.

In June of 1955, a 6000 pound dummy bomb was successfully released from a B-47E during a 2.6g pull-up from level flight. In another test flight, an 8850 pound practice bomb was dropped from a 2.5g pull-up.

Despite some doubts about the structural integrity of the B-47 under the stresses involved in such maneuvers, in December of 1955, SAC ordered that 125 B-47s be modified for low-level flight.

Low-level bombing involved special crew training. A training program known as Hairclipper was started in December of 1955. However, adverse weather, excessive maintenance requirements, serious deficiencies in LABS systems and several accidents caused Hairclipper to be officially discontinued in March of 1958. However, the end of Hairclipper did not signify the end of low-level flying.

A program known as Pop Up, a related training program that took advantage of recent advances in weapons developments, fared better. In the Pop Up maneuver, the aircraft came at low level, pulled up to high altitude, released its weapon, and then dove steeply to escape the enemy radars. Following the discovery of fatigue cracks in the wings of some B-47s in April of 1958, Pop Up was interrupted while the entire B-47 fleet could be checked. It was resumed in September, and by the end of 1959 the training program had finally been completed.

On January 25, 1957, a B-47 flew from March AFB, California to Hanscom Field, Massachusetts in 3 hours, 47 minutes, at an average speed of 710 mph (617 knots). On August 14, 1957, a 321st Bomb Wing B-47 made a record nonstop flight from Andersen AFB, Guam to Sidi Slimane Air Base in French Morocco, a distance of 11,450 miles (9950 nautical miles) in 22 hours and 50 minutes. This required four midair refuelings. In November of 1959, a B-47 assigned to the Wright Air Development Center stayed in the air for 3 days 8 hours 36 minutes, covering 39,000 miles (33,890 nautical miles). This broke previous time-and-distance records.

The discovery of fatigue cracks in the wings of the B-47 during April of 1958 and a rash of new accidents in early 1958 triggered an immense inspection and repair program known as Milk Bottle. All three B-47 manufacturers as well as AMC were involved in Milk Bottle. The low-level B-47s of the 306th and 22nd Bomb Wings were the first to enter the program, since they were most in danger of fatigue cracking. The program ended in July of 1959. Although Milk Bottle did not solve all the B-47's problems, it did go a long way in to making operations with the B-47 a lot safer.

SAC initially wanted 1000 B-47s modified for low-level flying, which meant fitting virtually the entire Stratojet fleet with absolute altimeters, terrain-avoidance equipment, and Doppler radar. Because of the Milk Bottle repair program, testing delays, and the phase-out of some SAC B-47 wings due to a lack of funds, SAC was forced to scale down its low-altitude requirements to only 500 Stratojets. This program was given a new sense of urgency by the belief that by 1963 all B-47s would be hopelessly obsolete if they were not equipped for low-level flight. However, fund shortages dictated that SAC scale down its low-altitude requirements to only 350 aircraft.

A total of 931 B-47Es were built by Boeing-Wichita, Douglas-Tulsa built 274 and Lockheed-Marietta built 385. The final B-47E (53-6244) was delivered on February 18, 1957 to the 40th Bomb Wing at Schilling AFB, Kansas.

The beginning of the phase-out of the B-47E coincided with the delivery of the last example. In 1957, the 93rd Bomb Wing started exchanging its B-47s for B-52s. In March of 1961, President John F. Kennedy directed that the phase-out of the B-47 be accelerated. However, this was delayed in July by the onset of the Berlin crisis of 1961-62. In the following years, B-47s were gradually delivered to the storage facility at Davis-Monthan AFB. SAC's last two B-47s went to storage on February 11, 1966.

Serial Numbers of the Boeing B-47E Stratojet:

51-2357/2445 2358, 2360, 2362, 2363, 2366, 2369, 2373, 2375, 2380,
2383, 2385, 2387, 2390, 2396, 2397, 2402, 2406, and
2408 were converted to WB-47Es.
2360 on display at the New England Air Museum.
2412/2415, 2417, 2420, 2427, and 2435 were converted to WB-47Es. (89)
51-5214/5257 5219 and 5220 converted to YDB-47Es for the Rascal program.
5218 and 5257 converted to WB-47Es. (44)
51-7019/7083 7021, 7046, 7049, 7058 and 7063 were converted to WB-47Es.
7066 converted to a WB-47E. (65)
51-15804/15812 Built by Lockheed-Marietta. (9)
51-17368/17386 (19)
52-019/120 Built by Douglas-Tulsa. (102)
52-146/201 Built by Douglas-Tulsa. 0166 on display at Castle AFB Museum. (56)
52-202/393 Built by Lockheed-Marietta.
52-305 converted to a EB-47L.
52-389 to a JB-47E. (192)
52-394/620 (227)
52-1406/1417 Built by Douglas-Tulsa. (12)
52-3343/3373 Built by Lockheed-Marietta. (31) 53-1819/1972 Built by Lockheed. (154)
53-2028/2040 Built by Douglas-Tulsa. (13) 53-2090/2170 Built by Douglas-Tulsa. (81)
53-2261/2417 2280 on display at the WPAFB Museum.
2345 and 2346 were converted to DB-47Es. (157)
53-4207/4244 Some were converted to ETB-47Es and EB-47Ls. (38)
53-6193/6244 Some were converted to ETB-47Es and EB-47Ls. (52)
Specifications of the Boeing B-47E Stratojet:

Powerplant:

Six General Electric J47-GE-25 turbojets, 5970 lbs. static thrust dry and 7200
lbs static thrust with water injection.

Performance:

Maximum speed: 607 mph (528 knots) at 16,300 feet.
557 mph (484 knots) at 38,500 feet.
Cuising speed: 500 mph (434 knots).
Stalling speed: 175 mph (152 knots).
Service ceiling: 33,100 feet.
Combat ceiling: 40,500 feet.
Combat climb rate: 4660 feet per minute (maximum power).
Combat radius: 2013 miles (1744 nautical miles) with a 10,845 pound
Bomb load. Ferry range: 4035 miles (3506 nautical miles) with a 16,318 gallon fuel load.
Takeoff ground run: 10,400 feet, 7350 feet with JATO.

Dimensions:

Wingspan: 116 feet 0 inches.
Length: 107 feet 0 inches.
Height: 27 feet 11 inches.
Wing area 1428 square feet.
Weights:
Empty: 79,074 pounds.
Combat: 133,030 pounds.
Gross: 198,180 pounds.
Maximum takeoff: 230,000 pounds.
Armament: Two 20-mm M24A1 cannon in tail.
Maximum bomb load: 25,000 pounds.