

An inside look at the USAF's first jet bomber

by: Walter J Boyne

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The XB-47 first flew on December 17, 1947, with test pilots Bob Robbins and Scott Osler at the controls. (Osler was the first pilot to lose his life in a B-47 in a freak accident with the canopy.) The few people watching that day had no idea that this \$13 million project would prove to be the most significant multi-jet aircraft in history and would begin a dynasty of Boeing jet aircraft extending well into the next century.

With its 35-degree sweptwings and six podded jet engines, the radical XB-47 owed its configuration to American genius and the design data brought in from post-WW II Germany. Testing and development would not be easy, but the Air Force would buy 2,042 (some accounts say 2,032). It served the Air Force well as a bomber, a reconnaissance aircraft, a weather plane and a test bed, and it generated a host of stories about its quirks, hazards and accomplishments.

Only someone who had flown piston-engine bombers could really appreciate the wonderful qualities of the B-47. It was a mixture of advanced new design and Boeing's experience of many years of building bombers. It inspired the building of the B-52, of course, but perhaps more important, the success of the B-47 paved the way for both the KC135 tanker and the Boeing 707 transport, with all its follow-on designs.

For pilots who had flown the Boeing B-29 or B-50, the "Stratojet" (as it was never called by the people who flew it) was an impressive, damn near terrifying piece of super-modern hardware. We who were privileged to fly it in the Strategic Air Command knew that we were part of an elite strike force - the most powerful in history. The B-47 became our insurance policy. If a nuclear war had come while we were flying B-50s, we knew that few of us would have made it back. My own B-50 crew had essentially a one-way mission, with instructions to bail out over the Ukraine on the way back from the target and seek out "friendly natives." We didn't count on finding any. If, as was feared at the time, the Soviet Union launched its armies into Europe, we were confident that with the B-47, we would roll the Soviet Union up like a cheese blintz and bomb it in concentric circles from the outside in. We would have won the war in six days and cut the invading Soviet armies off from their devastated motherland. There would have been few B-47s lost. The Soviets knew this, too, and there was no invasion.

[B-50 days](#)

I won my wings on December 19, 1952, and graduated from advanced multi-engine training at Reese Air Force Base, Texas. Having finished high enough in the class rankings to be able to choose my assignment, I elected to fly four-engine equipment and chose the 93rd Bomb Wing at Castle Air Force Base, California, as my first operational unit. I was lucky enough to be assigned to the 330th Bomb Squadron-a happy outfit that flew B-50Ds.

Of course, the B-50 seemed huge at first, but it was a pleasant aircraft to fly and, I was told, much nicer than the B-29. There were usually 10 in the crew-aircraft commander, pilot, radar observer, navigator/bombardier, flight engineer, radio operator and four gunners. The flight engineer was indispensable because he kept watch over the big Pratt & Whitney R-4360 engines. By using an engine analyzer to spot an ailing spark plug or failing valve, he could ask that an engine be shut down as a preventive measure. Three-engine flights were routine but usually called for precautionary landings. Takeoffs were long, and both the climbout and the descent were relatively slow. Flight altitudes depended on the missions, which ranged from seven to 14 hours in length and usually included inflight refueling, celestial navigation and practice radar and visual bomb runs. We generally operated at around 25,000 feet, although many missions were flown at higher altitudes.

I had just become adjusted to the B-50-and in fact, had just flown my first full flight as an aircraft commander when the word came down that we were converting to B-47s. There was a mixture of joy and panic, for the B-47 had only a three-man crew: aircraft commander, pilot and radar observer. The radar observer also performed the navigator/bombardier functions. In the early days of the B-47, Gen. Curtis E. LeMay intended that every member of a B-47 crew be "triple-rated"; that is, all should have the training and wear the wings of pilot, radar observer and navigator/bombardier. When the B-47s began to stream into SAC-as many as in service at one time-this was no longer possible. The advent of the B-47 had a strange effect on the squadron. LeMay had introduced the concept of the spot promotion into SAC for especially well qualified crews. In the B-47, the radar observer would be the key to high performance, and there began an immediate jockeying among the senior aircraft commanders to get the best radar observers for their own new crews. This resulted in a lot of hurt feelings as former crew members were abandoned, and it led to at least one fistfight; in short, it was like the first round draft in the NFL.

For me personally, it was bad news: I was still about 100 hours short of the minimum flying time required to enter B-47 training. I watched in dismay as the crews were rapidly formed and reconciled myself to getting some sort of staff job while building flying time in the base flight aircraft, which had Lockheed T-33s, North American B-25s, Douglas C-47s and Beech C-45s. In those fine old days, you could be current in a number of aircraft, and the base Ops people were delighted to let you have one to fly on the weekend just to log flying time.

But being young and foolish, I got ticked off and went into the little Quonset hut where the squadron commander had an office. Fortunately, the CO was away; he would have thrown me out on my ear. But I cornered the adjutant, pounded on the desk and demanded to be sent to Wichita for B-47 training, regardless of the flyingtime requirements. Shrugging his shoulders, the adjutant cut orders for me go to McConnell AFB to the 3520th Flying Training Wing.

I was placed with a new crew: Maj. Harold McCarty as aircraft commander and Capt. John Rosene as radar observer. They were WW II veterans and very nice guys, although both probably had reservations about having a low-time first lieutenant as a pilot on a plane as sophisticated as the B-47.

For me, it was love at first sight of the B-47. The ramp at McConnell was filled with what seemed like hundreds of those beautiful aircraft, and I could not believe my good fortune in being there to fly it. McConnell had an impressive operation, with three flight sessions every day and a continuous line of B-47s taking off and landing. The ramp would shake as scores of engines were run up, sending out dark, rolling clouds of oily JP-4 exhaust that would have made an environmentalist faint. It was a hot, dry summer in Kansas, and ramp temperatures often rose well above the 100-degree mark. You could burn your hand on aircraft metal as you were pre-flighting, and by the time you were ready to taxi out, your flight suit was soaked with sweat. The heat caused lots of problems, including long takeoff runs, but training continued unless cockpit temperatures rose above 140 degrees.

Flying the B-47

Most of us learning to fly the B-47 had been given a little T-33 time to become familiar with jet aircraft, but nothing could really prepare us for the performance of the B-47. First, the small crew made life and discipline much easier, but it meant much more work. The entire day before a sortie was spent planning the mission so that all three crew members knew exactly what was required of each man. You reported three hours before takeoff, and although the aircraft preflight was much easier than that of the B-50, it still took about an hour and a half to complete. Inspecting the drogue and brake parachutes was sometimes a little difficult, as the B-47B trainers at McConnell were pretty beat up, and hatches and hinges did not always work without a little "chock maintenance" to get them firmly latched. The bicycle-gear arrangement made taxiing strange to us at first, but it quickly became second nature.

In the summer, the B-47 cockpit got inordinately hot, for after we closed the canopy, the sun's heat quickly raised the already high temperature. Sweating so profusely that the oxygen mask slipped off your face, you taxied out to perform the required pre-takeoff checks, which were vastly simpler than those of the B-50.

Operations at McConnell were typically at fairly light gross weights, for most missions ran only about four hours. The takeoffs took some adjustment, for power came up slowly on the General Electric J47 engines, and acceleration seemed agonizingly slow for the first part of the takeoff run. But about two-thirds of the way down the runway, the airspeed began to pick up, and then we were airborne, accelerating swiftly and pulling the nose up to keep a 310-knot climb speed-faster than we flew the B-50 in level flight. Right after the gear came up, the air conditioner kicked in, and a welcome blast of frigid air rapidly brought the cockpit temperatures down to a comfortable level.

One month, eight flights and 33 hours later, we were graduated from McConnell and sent back to Castle to begin operations with the B-47-flying 30 to 60 hours a month and beginning to learn just how advanced the aircraft really was. In the air, the B-47 was a beautiful, sensitive aircraft. You could roll it - and some pilots did - but it was stupid to do so, and more than one dished out to leave a triangular scar in the ground. Much has been said about the infamous "coffin corner" where the high-speed and low-speed stalls coincided. It is true that such a point existed in the flight envelope, but you would have had to work hard to put yourself in that position on a normal mission. The requirement to maintain exact speeds right down to the knot during the approach and landing phase has been overemphasized as well. The B-47 required an extraordinarily long, flat pattern. At typical landing weights, you'd turn final at "best flare plus 15" - say, 146 knots at 105,000 pounds - and you would be aiming to touch down at 123 knots. You did need to control speed, but just a caress on the throttles could raise or lower speeds a knot at a time. And, on an instrument approach, you could use differential throttle on the number-one and number-six engines to keep you on the ILS track.

Because the J47, like all early jet engines, was slow to accelerate, Boeing had devised a drogue chute that was deployed in the landing pattern and allowed you to maintain the engine at a relatively high power setting from which a go-around could easily be made. Once on the ground, the brake chute assisted the excellent anti-skid brake system to get you stopped. The brake chute had another use: if you hit front-wheels-first and bounced on landing, you could - if you knew just when to do it - deploy the brake chute and bring the airplane down to a perfect rear-wheel-first landing.

The precise power control made formation flying relatively easy in the B-47. We rarely practiced it, for the B-47 was intended to be a lethal penetrator, flying alone, or in well-spaced cells of three or more aircraft.

Perhaps the most critical situation in the B-47's flight regime was the loss of an outboard engine after you were committed to a high-gross-weight takeoff. You had just 1.7 seconds to make the control inputs necessary to prevent an uncontrollable roll-due-to-yaw situation. If you failed to react correctly by shoving in full opposite

rudder, you would lose directional control, and the aircraft would cartwheel. There are too many films of B-47s doing just that, and they all end in massive explosions.

The Boeing KC-97 tanker was still in widespread use, and the speed differential between the two aircraft made in-flight refueling difficult at higher gross weights. The tanker would be flying along at full power, with the B-47 coming in to connect at just above its stall speed. As the B-47 took on fuel, it would have to increase its airspeed, and this meant that the tanker would have to begin a descent to increase its own airspeed. In just such a descent, I once looked up to see a big puff of black oil as the KC-97 blew its number-one engine. The KC-97 seemed to accelerate in reverse as it whipped back overhead, unable to maintain airspeed because of the loss of power. We dived under it, lucky to have avoided a catastrophic midair collision. The swift, swept-wing KC-135 was much more compatible for refueling in flight.

My aircraft commander was a conscientious guy who made sure I got my share of takeoffs and landings, along with in-flight refueling experience. There was plenty of flying time that included some 24-hour missions - long enough to spend in an ejection seat.

In SAC, every crew position was evaluated continuously during dreaded spot checks by instructors in the squadron, by members of the Wing Standardization Board and by visiting firemen from SAC headquarters. Because of this, your performance had to stay sharp; otherwise, you could be unceremoniously removed from a crew. It turned out that we were doing pretty well as a crew, and we were given Lead Crew status - a step toward the coveted Select Crew designation, which in turn led to the possibility of spot promotions.

Despite this, I have to say that my most memorable experiences in the B-47 at Castle were bonehead mistakes I made and was lucky to survive. The first one came on a united simulated combat mission, during which the entire wing was launched, just as if war had been declared. On one of these, an aircraft crashed on takeoff and sent huge black clouds boiling up off the end of the runway. The mission went on, with airplane after airplane taking off over the burning crash site - each one giving a mental salute to the poor guys who had died. (And you knew your own family would be terror-stricken because although news of the crash would spread instantaneously, the identities of the crew members would not be released for hours.)

On the day in question here, the mission was to be a long one, and fuel management was critical, as it always was in the B-47. During the climb-out, the radar observer reported that the bomb-bay doors' position indicator showed that they might not be fully closed and locked. This was bad news, for if the doors were even slightly open, the increased drag would increase fuel consumption to a point at which we would not be able to complete the mission as planned. McCarty leveled the plane off at 25,000 feet, and I volunteered to go down

and take a look. This involved getting out of my seat, edging a few feet down the narrow, equipment-filled aisle, opening the entrance door and then climbing down the entrance ladder to the crawlway that led back about 15 feet to the bomb bay. We had to depressurize to open the door to get to the passageway, so I hooked up the emergency oxygen walk-around bottle, which had a nominal 10-minute duration - just enough to get down and back, or so I thought.

I got all the way to the point at which I could see that the bomb-bay doors were indeed up and locked, when all of a sudden, things went black. McCarty saw that my legs had stopped moving, so he made an emergency descent. I came to at about 10,000 feet, climbed back up into my seat, and we landed. Afterward, I had a private interview with Director of Operations Col. Pat Fleming, a 19-victory ace for the Navy during WW II. He had a reputation as a disciplinarian, and I expected him to tear off a piece of my tail, but he was as kind as he could be, making sure first of all that I was really OK. He then made notes on the incident, which showed that a walk-around bottle might have a 10-minute supply when sitting in an altitude chamber but not when you were crawling around the inside of a B-47. (Col. Fleming died just two years later in the first crash of a B-52.)

When word came down that the 93rd was to be the first wing to transition to B-52s, another scramble began to get the best crews. This time, the requirement to be a copilot had been raised to 1,000 hours, and I knew there was no way I'd be able to talk my way into a slot.

A decision was made that the Wing would retain its combat status through the transition and keep the B-47s in operation as the B-52s came on line. This gave me time for one more adventure.

We were coming back from a long mission with the fuel "right on the money," meaning that we had enough to make the high-speed penetration, land and then shoot a few touch-and-go's, a couple of which would be mine. In a normal B-47 descent, about 50 miles out, the aircraft was slowed to 305 knots indicated, and the landing gear was extended to provide some drag.

We did that-and got a series of red lights on the landing gear. McCarty leveled off at 10,000 feet and decided that we had better use the emergency gear-extension system to get the gear down and locked before we ran out of fuel.

I left my seat and went back to the left hand side of the cockpit, where the four levers used for emergency gear extension were. McCarty slowed the airplane to about 200 knots, and I began to pull the levers. The first full stroke unlocked the up-locks and allowed the gear to free-fall. Then I had to operate the emergency extension levers with full strokes, back and forth until the gears were down and locked. After a lot of huffing and puffing, I

got green lights, and McCarty reported the gear down and locked. Breathing hard, I got up to crawl back into the ejection seat and get ready for landing.

As I started to step up and move forward to climb in, I heard a bang; the aircraft had depressurized. I realized at once that the D-ring on my parachute handle had caught the left ejection-seat handle and initiated the ejection process. I stopped and stared down at the seat, not knowing what was going on. I prayed that the rest of the ejection sequence would not follow because if it did, the upper half of my body would be blown out of the cockpit, putting a crimp in my future plans.

The next 10 seconds seemed to take about two hours, but I finally realized that the left-hand grip was all that had moved and that neither the seat nor my upper body was going anywhere. I got the safety pin in the ejection seat, strapped myself in, and we landed. This time, I only had to talk to the squadron CO.

Despite my two misadventures, I had learned to love the B-47 and wanted to keep flying it, but first, I took the opportunity to go back and pick up my degree at the University of California at Berkeley. Then I was sent to the 4925th Test Group (Nuclear) at Kirtland Air Force Base. It was a small outfit, with two B-47s, two B-52s and a handful of Century Series fighters. The other pilots were all veterans of WW II, and most of them were high time B-47 instructor pilots from McConnell. They were superb professionals - the very finest pilots and the finest radar observers I had ever met. The missions included the live drop of nuclear weapons, which we did in Operation Dominic, the last series of live nuclear drops in history.

I was quickly checked out as an aircraft commander and began to enjoy the B-47 even more. It was hot at Kirtland during the summer, and the field's altitude of 5,000 feet made heavyweight takeoffs seem impossibly long. You would sit with the throttles bent forward and watch the runway markers ease by, waiting for the end of the runway, all the while knowing that after a short overrun area, there was nothing but a big rough patch of rocks and a cliff. But the B-47 would gradually accelerate, the numbers would be just right and at the last moment, the gear would lift off and you would be flying.

Most of the missions at Kirtland were shorter than the typical SAC mission. They usually involved taking off and flying to a bombing range - White Sands, Tonopah, or the Salton Sea were used most often - and setting up a pattern. The bombing range would get its telemetry set up, we'd fly a practice run or two and then come in and drop whatever it was we were carrying, bomb, missile, or test vehicle.

When things went well with the telemetry, we had often finished our mission within an hour of arriving at the range. This meant we had to burn off some fuel before landing, so we often dropped down to about 10,000 feet and cruised through whichever mountain range was nearby to check out fishing spots and even watch herds of

antelope run. Then we'd go back to practice some instrument approaches and shoot a few touch-and-go's before calling it a day.

The more I flew the B-47, the better I liked it, and I eventually felt completely comfortable in it, no matter what the mission was. It was a time when new weapons and tactics were being introduced, and we were tasked to drop everything from spiked runway penetration bombs to simulated nuclear weapons to strange shapes that were picked up in midair by Fairchild C-119s using recovery gear. We had no way of knowing it at the time, but this was the technique used to recover capsules from the Discoverer (Corona) series of spy satellites.

Of all the missions, the most fun was the low-level work done in tests of the "pop-up" technique. The mission called for a low-level approach - 55 feet or less-across the desert floor at 450 knots indicated. This posed a bit of a challenge because at 440 knots, your roll rate dropped to zero due to aileron reversal. The flexibility of the wing allowed a downward-deflected aileron to produce an upward force that caused a nose-down twist of the wing. Essentially, you had no ailerons at 450 knots; if anything went wrong, all you could do was chop the throttles and pull back on the control column to climb.

It didn't help much that the handbook noted that the flutter limit for the B-47 was 440 knots indicated. But having said all that, there was nothing more exciting than to be cleared into the range, drop down to sagebrush level and send a 450-knot blast of wind through the sand until you began the pull-up. As speed bled off, the ailerons came back into play; then, you would level off, the radar observer would drop a simulated bomb, and it was time to do it again.

I checked out as an aircraft commander in the B-52 at Kirtland and enjoyed it very much, even though it flew like a truck compared with the B47, which was being retired. The B-47 had a relatively short service career by today's standards; SAC phased out its last two B-47s on February 11, 1966. A few soldiered on as weather planes or test beds for a few years after that.

For some reason, the B-47 never captured the public's imagination and was quickly forgotten-except by the people who flew it, for it made an invaluable contribution to aviation and to the defense of our nation. Fortunately, you can still see just how beautiful the B-47 was in flight in the film "Strategic Air Command," which, despite its silly love story, portrays SAC and the B-47 in their finest hours.

Boyne is the former Chairman of the Board of Wingspan, the Air and Space Aviation Channel, and President of his own firm, Walter Boyne Associates. The author of 38 books, he is one of the few persons to have had bestsellers on both the fiction and the non-fiction list of the *New York Times*.