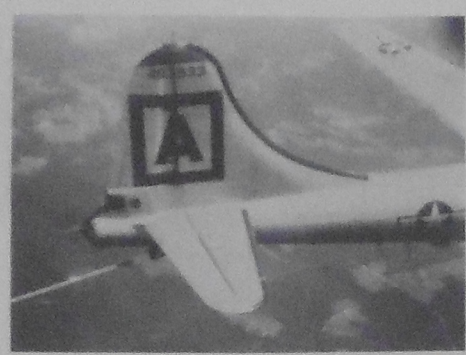

B-29 Receiver taking gas from KB-29 (E. Eckert)

who had only completed basic training, and zero for those who had completed neither. One airman, however, was shocked, cut, and bruised, when he jumped over a three-foot fence only to find a thirty-foot drop on the other side. Finally, the Wing entertained distinguished visitors during February, including General Matthew Ridgway, and later General LeMay and radio and television entertainer and flyer, Arthur Godfrey.[63]

On 30 January the Unit flew a simulated combat mission to Wheelus Air Base, Tripoli, Libya. Three days later, on 2 February 1953, five B-29s were making a predawn takeoff when disaster struck the second aircraft. Captain Charles "Red" Eley's (352d) number two engine was torching badly as he rolled down the runway, and almost immediately after the bomber lifted off the number one engine burst into an intense white fire, and then the number two engine may have failed. Eley was in an impossible situation: low airspeed, low altitude, and with one or two engines out on the same side. The bomber went into a steep left bank, barely missing a large stadium built by Mussolini, leveled out and hit a small, unoccupied stone house, and blew up. Only the tail remained intact from the burning wreck. None of the fifteen onboard survived.[64]

The 301st returned to the States in March and was commended by the Second Air Force for the outstanding manner in which it carried out the deployment. Major General McConnell, the same officer who had emphatically told Colonel Wade that the 301st had better toe the line, especially commended the Unit's superior performance in face of adverse weather, operational difficulties, and maintenance problems. This was preparatory to another challenge for the Unit.[65]

B-29 Crashed Barksdale AFB, LA 21 Nov 1951 (L. Dallas)

The Boeing B-47

The 301st was in the forefront of change when it participated in the upgrading of Strategic Air Command with the transition into the Boeing B-47 — the hottest bomber of the day. As a B-29 unit, the 301st had performed well, but not spectacularly; now it would get a new lease on life. The 301st, SAC, and the USAF were truly on the cutting edge of military and aviation technology when they made this change.

During World War II the AAF had investigated jet-powered bombers and had begun a process that yielded four aircraft, the most important of which was the Boeing B-47. It was also a beautiful aircraft with spectacular performance to match and it ushered in a new era and opened up a new world. The significance of the B-47 can be judged by comparing it with its American and foreign competition — there is just no comparison. The Boeing bomber evolved from a conventional jet-powered aircraft into a daring, if not radical, design with three distinctive features: engines underslung in pods, sweptback wings, and tandem landing gear.

Boeing's original design proposed a bomber with a straight wing and the engines buried in the fuselage. The airmen objected to this engine arrangement for both safety and maintenance, which led to a design with six jet engines suspended in four pods beneath the thin wing. (In contrast, the B-47's American contemporaries, the B-45, B-46, and B-48, each had their engines buried in straight, thick wings.) Pods permitted easier maintenance, safer operation, and allowed a thin, high-aspect ratio wing.

B-29 Mickey Finn. (Gen H. Wade)

Boeing found the only way to ensure the required performance was with a thin wing, and even that approach was not satisfactory until captured German research indicated the possibilities of higher performance by sweeping the wing. Its high-mounted, thin, sweptback wing was flexible, moving in flight as much as five or more feet in either direction. The B-47 was the first large American aircraft to fly with the sweptback wing when it first flew in December 1947, on the forty-fourth anniversary of the Wright brothers' historic flight.

The thin wing forced two major changes from conventional design. First, with no space to carry fuel in the thin wing, Boeing located all the fuel in the fuselage, which made fuel management more critical than on conventional aircraft. Second, as the wing was also too thin to accommodate the landing gear, Boeing engineers instead used two separate trucks on the centerline of the fuselage, and outrigger wheels mounted in the inboard nacelles for stability while on the ground. This unusual arrangement actually saved fifteen hundred pounds, but reduced the size of the bomb bay and required a special landing technique.[66] A proper landing required touchdown of both main trucks just about simultaneously, otherwise the aircraft would bounce from one truck to the other in a dangerous "porpoise." Later "softer" struts were added to help alleviate this problem.

Col Horace M. Wade
10 Feb 51-Jun 54 (Gen H. Wade)

Flyers soon learned jet-powered aircraft were different animals than their piston-powered predecessors. Certainly they had greater speed and altitude performance. They also had to be handled differently; for example, they were relatively slow to accelerate and decelerate. Props could be turned into flat discs in the air or reversed on the ground, effectively slowing down the aircraft. In contrast, the B-47's had an extremely clean design with only two protrusions, the underslung engines in four nacelles and the clear bubble canopy, which made it difficult to slow down in the air and stop on the ground. Later a 32-foot-in-diameter braking parachute was used to slow the bomber on its landing roll. While some note that it was underpowered, especially when operating at heavy weight, the Stratojet was a good performer. However, the J47 engines were slow to accelerate, taking seven to eight seconds to get to full power from idle, while rapid manipulation of the throttles could stall the engines. Therefore a 16-foot-in-diameter approach parachute was fitted on the "E" model and deployed shortly before the final approach so the pilot could carry the engine power at a high level for possible go-arounds.[67]

There are those who did not like the B-47. According to one non-301st B-47 pilot, "although it was often admired, respected, cursed, or feared, it was almost never loved."[68] He claimed the Stratojet was difficult to land, unforgiving, subject to control reversal at high speeds, and had bad roll-due-to-yaw characteristics. Pilots of the 301st have more positive memories of the six-engined bomber. While granting that it was both a demanding and unforgiving aircraft, they go on to sing its praises. Most remark on its performance, its responsiveness to the controls, "smooth as silk," and that "it was a fun plane to fly." Certainly 301st personnel saw the B-47 as a giant step up from the B-29, like moving from a "Ford Escort to a Cadillac" in the words of one former pilot, or from a "Model 'T' to a Ferrari," in the words of another. Put another way, some saw the B-47 as a six-engine fighter, even if it had a wheel instead of a control stick. SAC received its first B-47 in October 1951, with the first B-47 wing becoming operational in June 1953.[69]

There were many problems attendant on SAC's conversion to the B-47, but problems are to be expected with any new aircraft, and certainly with an aircraft as different in so many ways as the B-47. The equipment did not work as well or as reliably as desired. One problem was the K-2 navigation-bombing system with its 1,600 pounds and 369 vacuum tubes scattered throughout the airframe, both inside and outside the pressurized cabin, that made reliability and maintainability difficult. A second problem was the remote-controlled tail armament that proved so troublesome the Air Force cancelled the Emerson contract and awarded it to General Electric. Fuel leaks were a third problem area that grounded the bomber fleet in September 1952, did not abate until 1954, and then reappeared the following year. Ejection seats, deleted from the original versions, had to be put back into the aircraft to ensure the crew some chance of survival at high speeds. Little wonder General LeMay stated the first 250 to 500 B-47s would be inadequate bombers. The USAF demanded twenty-one hundred design changes before it accepted the first Stratojet.[70]

A New Tanker as Well: The Boeing KC-97

At the same time SAC was assimilating B-47s into its bomber inventory, it also was re-equipping its tanker force. In July 1951 the Command received its first Boeing KC-97. This aircraft was derived from the B-29: the XC-97 had the same wings, tail, landing gear, and engines as the bomber. When fielded, the KC-97 was only slightly changed and besides a clear difference in profile, notably the underslung "extra" fuselage, it had more powerful engines and a taller tail than the B-29. The 301st ceased operation with the KB-29 in May-June 1953. That summer 301st refueling crews went to West Palm Beach, Florida, for a 60-day TDY to undergo transition to the KC-97.[71]

The Boeing tanker featured a "flying boom" mounted under the tail. This system permitted refueling at higher speeds than the hose methods and refueling hookups were considered, at least by SAC, to be easier to accomplish. The bomber descended to fifteen thousand feet and closed to a position below and to the rear of the tanker. Unlike the hose or crossover method, the bomber pilot did all the maneuvering and station keeping. The bomber pilot had to adjust to the "bow wave," the airflow from the bomber which pushed the tail of the tanker up and away from the bomber. Using visual clues and lights underneath the KC-97's tail manipulated by the boom operator, the pilot maneuvered close to the tanker so the boom operator ("boomer") could extend the telescoping 46-foot boom and "fly" it into contact with the air-refueling receptacle forward of the B-47 canopy.

Initially the B-47 pilots had a tendency to overcontrol during the process. The biggest problem was the difference in performance between the two aircraft. First, fifteen thousand feet was not an optimum altitude for the jet. More serious was the incompatibility of speeds. From the start, the bomber was flying about as slow as it could, while the tanker was flying about as fast as it could. The problem only worsened as the B-47 took on fuel and required even more air speed to fly with the additional weight. Therefore, heavy-weight refueling resulted in a slight descent, as the B-47 was flying just above stalling speed and the KC-97 was nearly at maximum speed. A normal refueling took about fifteen minutes. Some claim that refueling between the B-47 and KC-97 was more difficult than that of the B-29 and KB-29 combination, and more difficult than other refueling hookups. It was not unusual for a transitioning pilot to require five or six attempts to get the "hang" of refueling a B-47 off a KC-97.[72] In any event, the KC-97 was a much more comfortable aircraft for the crew, and clearly a higher performance machine than the KB-29. It proved to be a satisfactory aircraft in this rather unglamorous role of "passing gas."

L to R: Richard E. Barton; UK; Arthur Godfrey; Col Horace Wade escort ofc

Transition to B-47s

Originally the 301st was slated to be one of the first units to convert to the B-47. But by the spring of 1950 it had slipped to third in the queue, then to fourth, and by 1951 was listed as seventh. Supposedly it awaited a B-47 unit to pick up its war plan responsibilities before it could make the conversion. Then the 301st was moved up, according to the Second Air Force History, "because it was a seasoned unit [which] would be more capable of quicker conversion than less experienced units."[73] In February 1953 the Unit learned the long-awaited conversion would begin in April, with B-47s scheduled to arrive in August. At the same time the tanker squadron would change over to the KC-97. As already noted, the first 301st bombers did not return from the British TDY until 11 March.[74]

Returning to Barksdale, the Unit cleaned up its B-29s, inside and out with the idea that "the cleaner the airplane, the better you fly." Most important, they formulated a plan to make the transition as quickly and effectively as possible. They had six months. One incentive was that everyone would lose their hard-earned "spot" promotions as the Unit was pulled out of the war plan during transition; therefore, the quicker the transition, the quicker their "spots" would return.

The 301st sent a team of about twenty-five people to McDill to see how the first two wings had transitioned to the B-47. These units had learned the hard way, suffering some aircraft accidents in the process. As Wade later commented: "I'll steal anything that anybody has got that is better than what we've got."[75]

The conversion to the B-47 presented the 301st with challenges and opportunities. The B-29 had a crew of five officers and five enlisted men, while the B-47 was manned by three officers. Therefore the leadership of the 301st was able to select those who would move to jets. Some of the aircrews went on to the air-refueling squadron that was re-equipping with KC-97s. Others went to other SAC flying assignments, such as B-36s, while still others moved to ground jobs. While most of the pilots (aircraft commanders and copilots) made the switch, the question was who would man the third crew position in the B-47 as this individual would have to do what three men (navigator, bombardier, and radar operator) did in the B-29. New equipment made it a different job, as did the B-47's greater performance. SAC was somewhat prepared for this change with its "triple headed monster" school at Mather AFB, California, where crewmen were trained to perform all three tasks.

Most, if not all, of the crews went to Pinecastle AFB, Florida, about six to ten crews at a time, each for six weeks. A few crews did go to Wichita for their training. The pilots first flew the T-33 jet-powered trainer, and then moved up to the six-engine bomber. Air Training Command had responsibility for the training and set up a ground school at Barksdale. Air and ground crews alike were excited about operating the jets.

The biggest change for the aircrews was the increase in speed. The B-47 was also a much more difficult aircraft to slow down as it was so aero-dynamically clean, in comparison to propeller-powered aircraft. Refueling also presented a challenge and certainly was the most difficult task for the transitioning pilots. The four 301st pilots who failed the program did so over this aspect. Now the bomber pilot had to do the maneuvering and fly formation with the tanker, in contrast to the previous procedure. Finally, the new aircraft was not without its problems, chief of which was fuel leaks. In September ten B-47s, on average, were grounded each day because of fuel leaks. With four repair crews working a seven-day schedule, the 301st resolved the problem in about a month. But the leak problem reappeared in the B-47 fleet in 1955.[76]

Colonel Wade brought the 301st's first B-47 to Barksdale on 7 July 1953. The refueling squadron had its full complement of tankers in August, and by 10 December the 301st was fully equipped with forty-five B-47s and twenty KC-97s. The Unit was able to accomplish this transition smoothly without an accident in five months rather than the six allotted, and it was declared combat ready on 1 January 1954. This outstanding performance was due to a number of factors, perhaps most important it was a successful team effort. The personnel of the 301st, officers and men, flyers and support, were up to the task in qualification and in motivation. The excitement of the B-47 and the Unit's experience and continuity played a major role in fostering a positive attitude. The transition was well conceived, with everything charted ahead of time, and then carried out effectively. Hard work and luck also played a part. Finally, Colonel Horace Wade provided the driving, positive leadership required.[77]

(E. Ecken)

Further Laurels

The proof of this superior performance was not long in coming. In October the 301st took part in SAC's Bombing and Navigation Competition held at Tucson, Arizona. The Unit's crews placed second and third, and as a Wing they took top honors in the bombing phase.[78]

To show the 301st was combat ready with its new aircraft, a "graduation exercise" was held. As SAC had no criteria for such an operation, which is surprising in view of SAC's reputation for having a plan, policy, and procedure for everything, it was up to the 301st to create some. Colonel Wade did not believe that putting up all the B-47s into cloverleaf patterns on repeated bomb runs against one RBS (Radar Bomb Scoring) site was adequate. Therefore, around November 1953, the 301st did something a bit more imaginative. They flew to Jackson, Mississippi, Little Rock, Arkansas, Dallas-Fort Worth, Texas, and then Oklahoma City, Oklahoma, before reversing course and returning by the reciprocal route. Thus, the bombers would "attack" four different RBS sites on one flight. The 301st flew a bomber stream of about ten bombers each night, with night air refueling, and passed the test with flying colors.[79]

Very Early B-47, no Wing Tanks (R. Fentress)

One 301st preparation for future overseas deployments was somewhat unorthodox. As long as there have been airplanes and airmen, liquor has been carried back to the home stations. However, the high altitude at which B-47s flew was very cold, and there was a risk of the bottles freezing and breaking. Thus, the 301st ran various tests with champagne, wine, and beer to determine if the B-47 operating at thirty-five thousand to forty thousand feet could successfully haul as much liquor in the bomb bays as had been hauled by the B-29s. They could, and they did.[80]

The 301st's true test came in February 1954 with a deployment to overseas bases and then simulated combat missions from these bases. The concept was for the B-47s to fly nonstop to their targets aided by air refueling and then to recover at overseas bases. SAC was attempting to lessen the importance of staging aircraft to overseas bases before the initial air strike, thus reducing the vulnerability to a Soviet first strike. This became known as operation FULLHOUSE.[81]

The Second Air Force took this one step further by deploying an air division of two B-47 wings in an operation codenamed HIGH GEAR. When the plan was executed the division commander and support force from one wing would deploy to the division's forward operating base in KC-97s of both wings. The B-47s would then pick up their weapons enroute to the forward operating base. The concept decreased the time to launch strikes, decreased the vulnerability of resources on the forward bases, and increased operational flexibility. As flown by the 301st, the concept reduced the time required to put the first bomb on target by four days.[82]

The 301st began planning for the operation in December 1953 and on 15 February 1954 they began deployment of forty-five B-47s and twenty KC-97s to North Africa for a 45-day TDY. The tankers flew ahead to Bermuda and from there refueled the B-47s, one squadron each night for three nights. The bombers flew the 4,775 miles nonstop, with the first bomber landing at Sidi Slimane, 135 miles northeast of Casablanca, on 18 February. The KC-97s then moved to Nouasseur, French Morocco.

After landing in Morocco, the B-47 crews went to bed in Dallas huts (tents with plywood floors) and then arose around 0400 hours to brief for a simulated war mission. They flew over the eastern Mediterranean, refueled off Sicily, dropped a practice bomb, refueled again off Libya, and recovered at Sidi Slimane. The aircraft were then serviced and returned to an in-commission status. That this operation went so well is a credit to excellent planning and hard work, particularly by Major Dick Barton, Chief of Maintenance. All details were charted out with precision, permitting the 301st to get all forty-five B-47s when and where they were supposed to be. The Wing stayed in North Africa for almost two months.

There were problems. Rainfall in Morocco during March was more than five times the norm, which made operations difficult and living conditions uncomfortable. The runway at Sidi Slimane was very rough, which meant the heavily-loaded B-47s took off with their underslung, drooping outboard pods dangerously close to the runway. Meanwhile, the tankers had their own problems at Nouasseur, primarily due to offshore winds that blew perpendicular to the main runway. This made heavyweight takeoffs dicey, and occasionally winds exceeded the maximum crosswind component.[83] Yet everything went as planned.

There were some tense and difficult moments, which after the passage of time and retelling, become humorous. Wallace Horton was flying as aircraft commander and the Deputy Wing Commander Colonel George Jumper as copilot on a night-training mission when the heater went out, reducing the temperature to arctic conditions in short order. Nevertheless, the crew flew on trying to accomplish an RBS bomb run. Meanwhile, Jumper's inter-phone went out and the cold cracked the canopy. Little wonder then that Jumper ordered the plane put down. To further complicate the situation, the base had lost most of its power, knocking out the ground radar and runway landing lights. The tower announced that the field was closed, but Jumper, in no uncertain terms, authorized the landing. Using the bomber's radar, Horton made an approach, and with jeeps' headlights illuminating the threshold, landed.

KC-97 and crew, Barksdale, AFB, LA (R. Fentress)

R to L: Col Horace Wade, CO 301st; B G. Henry K. Mooney 4AD Cmdr; Col Cecil Combs 376 CO (Gen H. Wade)

When the ground crew met the B-47, they found the crew half frozen. In fact, the first ground crewmember who climbed up the ladder was convinced the entire crew was frozen when he saw the red lights of the cockpit, the frost, and Jumper's bald head. With some difficulty, the crew struggled down the ladder. Jumper headed for the APU (auxiliary power unit) and its hot exhaust. He was loving it to death, trying to get warm, when a ground crewmember tried to talk to him. The Colonel ignored him as he was much more interested in the heat exuded by the machine. Finally, the enlisted man shouted: "Colonel, your shoes are on fire."[84]

The 301st's achievements during this deployment did not go unnoticed. Brigadier General Maurice Preston commended the Unit's efforts:

> *There were no aborts, no deviations from planned routes, and there were no failures of equipment which impaired the effectiveness of the operation. In executing this operation so remarkably effectively, the 301st Wing has exceeded the performance of all preceding TDY bomb units and has established a standard of excellence by which the performance of bomb units may well be gauged for years to come.*[85]

Major General Frank Armstrong, Second Air Force Commander, summed matters up quite simply: "Colonel Wade has come up with the best wing in the Air Force!"[86] Armstrong noted at a press conference that Wade: "moved his group 4,775 statute miles without a hitch, made his strikes for several thousands more miles and did it all within the allotted timetable, a 100 percent successful performance. You cannot do any better than that."[87]

Three months later the Unit received praise from an even higher source, Curt LeMay. The SAC Commander noted the excellent performance of 301st maintenance, as the Unit's in-commission rate on the TDY exceeded the SAC average, and the number of sorties was higher than any other B-47 unit. This accomplishment was not only noteworthy and commendable, according to LeMay, it "could only be achieved through outstanding leadership and supervision and is indicative of a well-operated maintenance organization."[88] Finally, the Air Force Chief of Staff commended Barksdale for its outstanding accident prevention record for the period of July through December 1953. In the words of Air Force Chief of Staff General Nathan Twining: "This record is even more commendable in view of the expeditious manner in which the 301st Bombardment Wing converted to B-47 type aircraft and achieved combat-ready status."[89]

All the Unit's personnel were responsible for the 301st's success. While the credit and this narrative tend to focus on the flyers, it must clearly and emphatically be stated that everyone played a role — it was a team effort. This was the first time such a deployment had been run, and it went without a glitch. There were no accidents, incidents, or aborts. Clearly it was a great start (with new aircraft) for a great Unit.[90]

Perhaps a short vignette helps capture the role of the ground crews. Airmen Second Class Joy Harris (32d) was the crew chief for Major William Goade's B-47, the first plane in SAC to reach six hundred hours without an engine change. For this, General Electric presented Harris with a pen and pencil set and promised him a Cadillac if he could coax all six engines to one thousand hours before a major overhaul. Not bad for a man of such modest rank and one whose qualifications were questioned when the original crew chief was transferred. Despite his skill, diligence, and motivation, Harris was not to get that fancy car for at 749 hours one of "his" engines sustained damage in the compressor sector, probably from ingesting a rock while taxiing.[91]