

Memories of a Navigator

By Sigmund Alexander

Every mission flown in SAC was in fulfillment of quarterly requirements. On an average, each crew flew 200-250 hours a year. Due to the amount of time spent on other duties, it was often difficult to complete the quarterly requirements. The primary commitments were alert and reflex.

Alert was a period of time spent by each crew each month in a combat readiness condition. Depending on the prevailing requirements, this could be one week on, one week off; or four days on every ten days; or whatever schedule was currently in effect.

On alert, combat crew members and their crew chiefs lived in their flight suits in underground bunkers next to the runway and their planes. Should the alert be sounded, response would be immediate. Each man developed his own favorite activity to take up the long boring hours not spent in briefings. Some played cards, watched TV or read, some did wood-working. One KC-97 tanker boom operator developed a talent for crocheting while on alert, and raised the ire of the local women by entering his work in the surrounding county fairs and consistently winning.

Reflex was an extended version of alert. Every third month, the crew would fly their aircraft to some location such as England, Spain, North Africa or Guam where they would spend three weeks on alert. It was three-week cycle with the first week on alert, the second week off alert and the third week back on alert again. At the end of the second week of alert, the crew rotated back home. The week off alert made the three-week reflex cycle more bearable since it allowed for sightseeing in Europe or enjoying the beaches on Majorca.

The whole alert/reflex system in a given quarter resulted in a crewmember spending up to six weeks away from home. When not on alert, the remainder of the time was spent fulfilling training requirements and not leaving much time to family life. It was foregone conclusion that when the husband was gone the washing machine or car would break down, the kids would come down with the chicken pox, or the baby would arrive early. To cover a supposed missile gap, the then Secretary of Defense Bob McNamara increased the alert commitment to 50%. McNamara never once considered the hardships, which the 50% alert commitment imposed on crews and their families. Though, gone, he is fondly remembered as Sweet Old Bob or S.O.B. for short.

Flight planning for a B-47 mission was performed the day before the scheduled flight. The key to, successful flight planning was to meld refueling tanker rendezvous times, low-level entry times, low-level drop times, and other required activities into your plan. This usually took all of a morning. If you couldn't complete it in the morning, you took it home to finish that night. This was the norm. Afternoons were spent going over the radar film of

low-level routes and various targets. Takeoffs were scheduled around the clock in line with SAC's 24-hour launch and maintenance capabilities. SAC was not Air Training Command. In general however, there was no weekend flying unless you had RON'D (remained overnight), when weather or other problems prevented your original return, and the plane had been diverted to another location. I acquired a large number of razors bought elsewhere until I routinely kept one in my flight bag.

The day of your flight, you picked up your chute at Personal Equipment (PE) and proceeded to the aircraft 2-21/2 hours before takeoff. If it was a cold day, the crew chief would have started the Nielson heaters to warm up the equipment and instruments (crew comfort was secondary) prior to our arrival. To enter the aircraft, you had to maneuver the chute up a hazardous telescoping ladder. I had a ladder collapse while I was climbing it, and I fell to the ground compressing my spinal column. Thirty years later I had another fall and the x-ray revealed that I had fractured a bone in my spinal column when I fell the first time. One never forgets what it was like to preflight an aircraft on a dark winter's night with the temperature at 20 degrees below zero and the wind and snow blowing over an icy ramp.

Once on board the aircraft, I had to work my way to the nose of the aircraft. This was not a simple matter as the B-47 itself was extremely cramped. The B-47 was designed before ergonomics and human engineering, with not much thought being given to where various components were placed. Crew members joked that the B-47 was designed to be flown by a five-foot ape with eight-foot long arms.

At my station I would preflight the radar hoping that it worked. If not, it meant a call to radar maintenance hoping that they would be able to fix it. This was the era of vacuum tubes, amplifiers, and mechanical computers that lacked the reliability of today's solid state electronics.

Engines usually were cranked up 20 minutes prior to scheduled take-off time (T/O). One taxied from the parking spot to the hard stand at the end of the runway prior to take-off. On more occasions than most of us wish to remember, an engine or radar problem showed up. Then the fun began. First, a two-striper would try to fix the problem; if he couldn't, a sergeant tried, followed by the super sergeant. In the meantime, the maintenance captain arrived to watch over the shoulder of the man trying to fix it. Successively higher ranking officers would follow him.

Making scheduled takeoffs was very important in SAC. Not making one, or aborting one, was a definite no-no, costing points in the Management Control System (MCS). If no problem occurred or the problem was fixed, you'd roll out to the T/O position. The AC would pour on the coal to the J47 engines, holding it on the runway with the brakes until the scheduled minute and second for T/O, and then release the brakes.

Thus began the most dangerous part of the mission. The B-47's gross weight had risen to 230,000 lbs. from the 125,000-lbs. gross T.O weight of the B-47A. The thrust available on each engine had risen from 4,000 lbs. to 5,970 lbs. but it still was not sufficient. Water injection had to be used to increase the thrust to 7,200 lbs. However, water injection produced large black clouds, which darkened the runway. In today's world, it would be classified as an environmental disaster.

On brake release, the navigator started the timing to determine whether the aircraft was accelerating fast enough to accomplish take-off. S-1 was the position where you either committed to takeoff, or to abort. After S-1, the greatest danger would be losing an outboard engine or control problems which would cause the aircraft to roll over on its back if the AC or copilot (depending on who was flying the plane at the time), didn't catch it fast enough. At night, it was all but impossible to take corrective action in time. I had a number of close friends, including my first AC, who were killed during night take-offs.

Takeoff could become even more hazardous if you were scheduled for a MITO (Minimum Interval Take Off). This meant aircraft took off 7 1/2 seconds apart on both sides of the runway or 15-seconds between each aircraft on the same side of the runway. MITO was designed to ensure that all alert bombers and tankers would be airborne 15 minutes after an alert was sounded. Fifteen minutes was determined as the warning time available prior to a Soviet ICBM strike. It became extremely hazardous during an ORI when six B-47s would take off followed by KC-97 tankers. Visibility was reduced to almost zero at times by the black smoke generated by water injection. Turbulence was another problem created by MITO. This turbulence led to KC-97 crashes in both the 509th and 100th Bomb Wings.

If MITO wasn't enough, you could be scheduled for a JATO, Jet-assisted Take Off, or ATO, Assisted Take/Off. The JATO bottles were attached to rack which because of its appearance was called a horse collar. The trick was to get rid of the rack once the JATO had been expended. On occasion, it took some rather violent maneuvering to shake free an empty rack if it didn't come loose on the first attempt. To this day, several hundred racks remain on the bottom of the coastal waters off Maine and New Hampshire.

After takeoff, we usually headed for the refueling track I.P. (Initial Point). At Pease, the principal track was Fighting Fox, which ran in a northeasterly direction across Vermont, New Hampshire, and Maine. From the I.P., the navigator directed the AC towards the refueling tanker after identifying it through the use of the tanker's IFF.

The navigator continued to direct the AC to the tanker until it was in visual range. Refueling was always hazardous, but particularly when it was a Mass Gas in weather with three to six B-47s on parallel tracks rendezvousing with three to six KC-97s on parallel tracks. We were all closer to one another than I care to remember. The KC-97's code lights were the key to hitting your designated tanker.

Hookup was accomplished only after you having visually acquired and identified your tanker. In all the refuelings I have participated in, I have only once watched the boom hit the refueling receptacle. The refueling receptacle was directly over my head, and I did not care to contemplate what would happen if the boomer missed his target. There was more than one occasion where a B-47 landed after a refueling mission with a boom embedded in the nose of a B-47.

Refueling with a KC-97 was never a simple operation, as the B-47 had to slow down to near stalling speed, while the KC-97's engines were at max just to keep up. The refueling operation was dictated by the maximum speed of the KC-97. There wasn't anything more satisfying than to hear the boomer say, "Sir, you have taken on your scheduled offload, and you are free to break away on my count of three."

The arrival of the KC-135 made refueling easier, but it was awhile before sufficient numbers were in the fleet. Initially, we hit them when we were coming back from Reflex in Europe. One KC-135 could refuel three B-47s. After 1964, KC-135s were used more often for the B-47, but for the most part, KC-97s continued to refuel the B47 until its phase out.

After refueling, we might accomplish a grid navigation leg or proceed to the low-level navigation entry point. Flying grid in a B-47 was easier in some ways than in a transport aircraft. This was due to the fact that radar could be assigned to grid north, and therefore your grid map and radar were in sync. We flew in grid going Reflex to Europe. Unfortunately, the B-47 had only a periscope sextant to assist the navigator. There was no radar altimeter, or LORAN, or Doppler radar crossing the Atlantic Ocean. This was a problem in daylight as all you had was either a speed line or a course line. Pressure pattern was not a simple matter in the B-47 as the radar had to be used to measure the true altitude over the water. Crossing the ocean, the B47 navigator had nothing more available to aid him than did a 19th century mariner.

If we were scheduled for a low-level route, it was usually Oil Burner Hangover with entrance at Houston, Maine or Lexington Bluegrass with entrance at Lexington, Kentucky. At the Houston VOR, you descended to the low-level altitude prescribed for the first leg of the low-level route. As I recall, this altitude was 1,000 feet above the highest terrain twenty-five miles to either side of each leg of the low-level route. 280 KIAS (knots indicated air speed) was the IAS on the route. During the last 30 minutes, we accelerated to 330 KIAS. The Oil Burner Hangover route was relatively straightforward.

At Lake Champlain, preparations were made for the bomb run by setting the computer to coordinates of an easily identifiable GPI Point, ground position Indicator, a peninsula on the lake. The bombing cross hairs were then shifted to the IP at Indian Lake. Air speed was accelerated to 425 KIAS from the IP for the bomb run on the target at Watertown bomb plot. From the IP to the target, the copilot checked the offsets for the offset bombing point, ran the bomb run check, and prepared for the ECM (electronic counter-measures)

run. Initially, our bomb runs were Long Looks, which meant climbing to 18,000 feet after the bomb was released and breaking away.

Later, the bomb runs were run at low altitude known as Short Looks. We usually had three drops in a row at the Watertown RBS (radar bombsite). The first was a synchronous run on the primary target. The second was also synchronous, followed by a final timing run. The two synchronous runs were known as low level Large Charge. The navigator also used his radar set to assist the copilot in the ECM-jamming part of the bomb run.

Following the runs, there was an endless wait for the RBS scores. You hoped it would be reliable. One's greatest joy came when the number sent back by the site was the same as your additive. This meant a shack or bull's eye, or in WW II parlance, "right down the smokestack." I had a triple shack one night at Watertown, and then had four shacks the following night on the same bomb plot. The unhappy opposite of a shack was a 99999, which meant that your bomb had landed somewhere in the Western Hemisphere.

After the bomb run, you could climb to altitude, and then go to Messina to make racetrack bomb runs over the Watertown bomb plot. Other times, you would proceed to Buffalo to make high-altitude runs on the Buffalo Nike Site. By this time, SAC was using all its RBS sites for low altitude bombing runs. Although high altitude bombing was no longer in the war plan, it was thought necessary to keep proficient at it. Bombing the Buffalo Nike Site in the winter could be sporting. With a jet stream on your tail, it could reduce your bomb run time to less than fifty seconds. Conversely, heading into the wind, it seemed an eternity before the run would end.

For the most part, landing was all that was left to complete the mission. However, because of the weather you could never be assured of landing at Pease. If the weather socked in, we usually landed at Plattsburg, New York or Lockbourne AFB in Ohio. There was a sign in the maintenance debriefing room at Plattsburg which read "Pease is our profession" – a play on the SAC motto "Peace is our profession." We always carried a razor, toothbrush, and toothpaste in our brief cases in case we diverted or ROned (remained overnight).

A landing could include an ILS (instrument landing system) approach. During the approach, the navigator had to monitor the aircraft and the altitude, and follow the approach on radar. Once committed to landing, the skill of the aircraft commander (or the copilot if he was the one making the landing), was put to the test. Everything had to be right or the aircraft, due to its bicycle landing gear, would balloon into the air if the front wheels hit first. A good hard landing thump meant you were on the ground, and going to stay there. A slight thump meant a multiple of hits, and you grabbed your radar set. A 100th Bomb Wing copilot, who was upgraded to AC and transferred to the 509th Bomb Wing, was killed while trying to land a B-47 on Reflex in England. After touching down

the aircraft ballooned, cart-wheeled, crashed and then exploded. The B-47 was demanding and unforgiving, especially on landing.

Landing was not the end of the mission however. We still had to go to the maintenance debriefing, which was on the third floor of the maintenance hangar where the maintenance specialists were. The wing commander felt the best way to correct any maintenance deficiencies was for those who had flown the plane to update the maintenance specialists who were to repair it – a logical conclusion. This could take up to an hour or more. Once the debriefing was completed, the flight crew could finally go home, or drop by the consolidated mess for breakfast before going home to bed.

Maintenance debriefing did have one relaxing element – a refrigerator filled with beer, which we could purchase. I can't remember any other beer tasting as good as those at maintenance debriefing after an exhausting mission. After an ORI, stronger spirits were provided under the supervision of the flight surgeon.

The following day, the cycle would begin all over again – even though we might not have gotten to bed until 2:00 a.m. If Bomb-Nav was experiencing difficulty repairing the radar set you could be called there to clarify the problem so they could fix it. If you were flying the next day, you would have to start your planning all over again. The routine seldom varied, and you got used to it. You got used to it because there were no alternatives. It was a way of life. Usually, the only way to get out of SAC was to screw up, and this, of course, was not really a viable alternative.

Eventually, we all left because the B-47 was retired. We all went in different directions – some went to B-52s, some to other commands in flying and non-flying slots. Most went on to Vietnam for a tour. Today, like most military experiences, it's a memory with a sense of camaraderie, of the shared experiences we underwent... Something like, "I'm glad to have had the experience, but I sure wouldn't want to do it over again." Whatever it was, it was special.

A memory trip from:

The B-47 Stratojet – Centurion of the Cold War

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