BOMB AWAY!
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When two good old boys from Mississippi get together after midnight, conviviality surely can result. In the early hours of February 5, 1958, two Mississippians came together in an alarmingly non-convivial way. Both were piloting Air Force jets traveling over 500 miles an hour when they slammed into each other at 33,000 feet over rural Georgia. Improbably, all four crewmembers involved survived, although one plane was totally destroyed and the other so badly damaged it never flew again. The event left an interesting memento, a Mark 15 thermonuclear weapon buried in the muck and ooze off Tybee Island, Georgia. It is still there.

The Mission

Starting in the 1950s, U. S. Strategic Air Command bombers flew regular practice missions designed to mimic the requirements of wartime attacks on the Soviet Union. Typically, these flights included an aerial refueling, a flight of some 5000 miles and an electronic "bomb drop" scored by a ground station in Europe or North America. As a part of this training, the bombers were often "attacked" along the way by Air Force fighters.

Major Howard Richardson, 36, and his two-man crew took off from Homestead Air Force Base south of Miami, Florida, at 3:58 on the afternoon of February 4, 1958. A fringe benefit of takeoffs from Homestead was that pilots departing to the north could occasionally see a Cape Canaveral missile launch -- particularly spectacular seen from the air. His aircraft, a B-47E, was not only as fast as many of the fighter planes of its day, it was stressed for many of the same maneuvers. In fact, one method of delivering its nuclear weapons was to approach the target at 500 miles an hour some 300 feet above the ground, pull up sharply and lob the bomb in an upward arc to land on its target several miles away. The plane would continue to pull up, roll through 180 degrees, descend again to low altitude and return in the direction from which it had come. The purpose was to approach the target beneath Soviet radar and then give the B-47 time to escape the effects of the nuclear explosion its weapon would cause. In Air Force parlance this was the Low Altitude Bombing System or LABS. More colloquially it was the "over the shoulder bomb toss".

Major Richardson's plane was fully loaded when it took off. In addition to internal fuel it had two external 1780-gallon fuel tanks, 5000 pounds of a water/alcohol mixture and an 11-foot 7-inch long, 7600-pound Mark 15 thermonuclear weapon in it bomb bay. Altogether the weight was 180,000 pounds, with the plane itself making up just 43% of the total. To permit such a high take off weight, the water/alcohol mixture was sprayed directly into the jet engines as the plane rolled, increasing its thrust by some 30% for 90 seconds. Even with this assistance, Richardson's aircraft used nearly the entire 12,000-foot runway to get airborne. The plane headed north over Florida – without seeing a missile launch – then turned west towards New Orleans. En route the plane topped off its tanks, taking on 60,000 pounds of fuel in a mid-air refueling over the Gulf of Mexico. Although mid-air refueling was done on most B-47 training missions, it was

never easy. In 1958, the tanker was a piston engine KC-97, an aircraft with a top speed several hundreds of miles an hour slower, and a service ceiling several miles below, a B-47. The bomber had to slow substantially and descend to get its fuel. The tanker, on the other hand, needed to fly as high and as fast as it could. As the B-47 took on fuel, its stalling speed increased. To avoid this happening, the B-47 often had to extend its flaps and sometimes both planes had to go into a shallow dive to maintain the necessary airspeed. A reflection of the dangers of refueling, there are three known occasions on which nuclear armed bombers were involved in refueling accidents leading to the unscheduled release of *eight* weapons.

After the mid-air refueling, Major Richardson flew his aircraft to a point near the Canadian border. He then turned south to make a bomb run on the radar scoring facility at Radford, Virginia, where the B-47 dropped an electronic "bomb", and then headed for its Florida base.

The bomber had flown 4000 miles in eight hours and its crew was ready to relax for the last several hundred miles – Richardson had a message from his headquarters telling him that everything south of Virginia was friendly territory and "enemy" fighters would not operate there. Three fighter aircraft waiting at Charleston Air Force Base, South Carolina, however, had received instructions from *their* headquarters saying that they could attack the incoming bombers at any point along their route.

On the night of February 4/5, Lieutenant Clarence Stewart, 23, along with two other pilots and three crew chiefs were in the alert shack near the end of the runway at Charleston AFB. Their three F-86L aircraft were parked just outside and were fueled, armed and connected to power carts. Alert tours were normally twelve hours and while confined to the alert shack the pilots and crews read, slept, played cards, drank coffee and waited for the horn to go off. While Richardson and his crew were taking it easy after a long day in their cramped B-47, Stewart and his companions were about to start a near supersonic ascent to a game of cat and mouse six miles overhead. These contests rarely lasted more than 45 minutes because the fighters gulped much of their fuel getting to altitude. It was the power of the F-86 against the speed and efficiency of the B-47.

Click ….

At nine minutes after midnight on the morning of February 5th, the horn in the Charleston alert shack went off. Air Defense radar had picked up Richardson's B-47 flight about 180 miles to the north. The crew chiefs raced outside and started their planes' power carts. Each then helped strap in his pilot and in 50 seconds the jets' turbines began to turn. They were in the air a little over three minutes later. Radar ground control directed them to a point several thousand feet above and some 15 miles behind the B-47s. This brought the B-47s within airborne radar range and permitted the fighters, which were not much faster than their quarry, to gain enough speed to overtake them. In recognition that the primary danger of attack in those pre-guided missile days was from the rear, the only defensive weapons B-47s carried were two radar-controlled 20-millimeter cannon mounted in the tail. The F-86s were armed with twenty-four 2.75-inch "Mighty Mouse" rockets. Because the rockets were unguided, an F-86 had to point its nose towards its target before simulated or actual firing.

With the target in range, an F-86 pilot used his radar to plan his attack. The radar screen was in the instrument panel and the pilot kept his eyes glued to it. He could not check the sky at the same time. (Modern fighters have heads-up instrument displays projected onto the windscreen so pilots can do both.) Although Richardson's B-47 was part of a two plane mission -- they were flying about a mile apart -- for some reason only one of them showed up on either the ground (as the accident report later showed) or airborne radar. Stewart's radar was locked onto the wrong plane. He was tracking a B-47 several thousand yards ahead, unaware he was descending on Richardson's oblivious aircraft directly in front of him. He felt turbulence and looked up – it was a bright moonlit night and visibility was excellent – and saw "the sky was filled with airplane". His reflexes, providentially, told him to roll his plane to the right. The ground station recorded a distinct radio "click" at 33 minutes and 30 seconds after midnight as the planes collided.

Good Old Boys

Both pilots were born and raised in Mississippi and, unlikely as it may seem, Howard Richardson's father may have delivered the baby who grew up to be Clarence Stewart's mother. Dr. Elbert Richardson graduated from medical school in 1907 and practiced medicine in rural Winston County, Mississippi, where he delivered several thousand babies. Clarence Stewart's mother was born in Winston County in 1910. Because the state of Mississippi did not keep birth records until 1913, she never acquired a physician of record.

Clarence Stewart describes his initial interest in flying as follows: "When I was 14, I was plowing a field behind a mule in the (Mississippi) Delta and a crop dusting plane came over. We didn't see many planes in those days and it scared the living (expletive) out of my mule. Right then I decided that being a pilot would be a whole lot more fun than using a mule's (behind) for a compass for the rest of my life." Stewart located the pilot and signed on with him to do odd jobs. By 16 he had learned to fly and he subsequently undertook 30-40 crop dusting assignments, mostly on weekends. After high school he moved on to Sunflower Junior College in Moorehead, Mississippi, an institution he refers to as "Harvard by the highway". In the spring of 1953, his second year, he and several acquaintances learned that an alligator had been caught in the country outside Moorehead and was for sale. Stewart says it was purchased for $5 but his friend Thomas Taylor, a retired county agricultural agent living outside Greenwood, Mississippi, recalled $10. In any case, one night shortly thereafter between the first and second acts of the of the Sunflower spring operetta, the alligator was released into the school fishpond. (This fine body of water covers about two acres and can be seen to this day at what has been renamed Mississippi Delta Community College.) One of their acquaintances told several of her friends of the happening, word got around, and the third act of the operetta had to be cancelled when everyone raced to the pond to see if there actually *was* an alligator there. There was. One thing led to another and Clarence Stewart's deferment from the Korean War suddenly became inoperative. Shortly after that he volunteered for the Air Force, went to flying school, thrived, and wound up in the sky over Georgia one cold February night in 1958.

For his part, Howard Richardson, our B-47 pilot, was a student at Mississippi State when the United States entered World War II in December 1941. He had already shown an interest in flying, having received his private pilot's license in April 1941. He joined the Army in late 1942, took pilot training and flew 35 combat missions over occupied France and Germany. His plane was named "Mississippi Miss" after the girlfriend that he remains married to in 2008. After the war he finished his degree at Mississippi State and joined the FBI. While he was in the middle of agent training at the FBI Academy in Quantico, Virginia, the Air Force offered him a regular commission and a career in flying. He accepted without hesitation and returned to active duty in 1947.

Meanwhile…

Richardson and co-pilot Robert Lagerstrom saw a bright flash and felt a tremendous jolt as the F-86 hit their B-47. Calipers in the navigator's hand bounced to the floor. A look from the pilot's position, assisted by the bright moonlight, showed the far right engine canted up at 30-degree angle and the right external fuel tank missing. Major Richardson and his crew were about as prepared as any crew in the Air Force for an emergency. Just three months previously the crew had come in third out of a thousand crews in the Strategic Air Command Bombing and Navigation Competition. Richardson himself had over 1000 hours in the aircraft, had served as an instructor pilot, and was well acquainted with the capabilities and peculiarities of the B-47.

The first order of business was to determine whether the plane could still fly. The severely misaligned engine was still producing power, causing the plane to roll. Fuel to it was immediately cut off, thereby increasing control although the damage had changed he plane's flying characteristics considerably. Major Richardson then dropped the (empty) left external fuel tank to better trim the aircraft. Next, to determine whether they could land safely, Richardson brought the B-47 down to 20,000 feet and made a sort of practice landing by cutting the speed, extending the flaps and lowering the wheels. The plane remained stable at 240 miles an hour and he decided to land at nearby Hunter Air Force Base outside Savannah. The Hunter tower advised that the overruns were being repaired and there was an 18-inch drop at both ends of the runway. Had the plane landed short, the landing gear and probably the dangling engine could have snagged and the 7600 pound bomb could have gone hurtling through the front end of the aircraft and on down the runway, not the desired outcome. He advised SAC that he planned to drop the weapon over water. Without waiting for a reply, he dropped the weapon at the first sight of salt water, just off Tybee Island. Seconds later SAC advised him to drop it 20 miles out to sea. Ooops!

Losing almost four tons of weapon both lowered the projected landing speed and made the B-47 easier to control. Still, with the definite possibility the damaged engine would hit the ground and the necessity of avoiding the drop at the end of the runway, the landing was anything but routine. Major Richardson landed at about 225 miles an hour, 80 miles an hour faster than normal at that weight, using the rudder and holding the right wing as high as possible to keep the damaged engine from dragging. At the unusually high landing speed the plane glanced off the runway and became re-airborne. The tail-mounted 16-foot runway braking parachute was deployed in the air, a use for which it was not designed, the plane hit the runway a second time and slowed. Then, said co-pilot

Lagerstrom, “We turned off the runway, shut down the engines and got the hell out of there”. Richardson’s decision to drop the bomb before hearing back from SAC was never mentioned again and, on the contrary, he was awarded the Distinguished Flying Cross for bringing his plane and crew back safely.

Meanwhile, the collision had ripped the left wing off Stewart’s F-86. In addition, the right wing was blown off, apparently when the 27-gallon fuel accumulation tank below the cockpit burst. Stewart, startled to realize he was now flying an airplane with no wings, ejected into the minus-50 degree air at 33,00 feet, wearing only a leather jacket, a thin flying suit, street shoes and no gloves -- his gloves had holes and he had taken them off to avoid snagging them on the radar controls. Although the ejection system was designed to open his parachute at about 12,000 feet, Stewart did not trust it. He pulled his ripcord just after ejecting and was rewarded with a very long, very cold ride during which he floated from almost directly over Sylvania, Georgia, east across the Savannah River to a spot two miles west of Garnett, South Carolina. In about 30 minutes he traveled six miles vertically and 22 miles horizontally. Although Stewart had scant protection from the cold, he did have an oxygen bottle to help him breathe in the thin atmosphere. If it was cold in the air, things were not much better on the ground where the Air Force reported a temperature of 35 degrees. He was fortunate to land “in a little clearing in the biggest damn swamp in South Carolina” but found his fingers to be so cold as to be almost unusable. To keep warm he inflated his life raft, turned it upside down and huddled beneath it wrapped in his parachute. After several hours he heard an aircraft overhead and tried to attract its attention by firing the flare gun in his survival kit. His frozen fingers fumbled and the gun went off prematurely. The flare barely missed his toes and plowed into the parachute. The plane did not spot this interesting fiasco, but the ruckus did awaken a local sleeping dog. In due course forest ranger Andy Walker appeared, convinced that he was onto yet another poacher. The mistake was quickly corrected and by sunrise Stewart was wrapped in a blanket next to a stove drinking some fine, possibly un-taxed, South Carolina whiskey. Stewart was grateful for the rescue, appreciation he showed by inviting Walker to his wedding and going hunting with him regularly over the years.

Because long-distance telephone calls were expensive in the 1950s and because he thought the matter was rightfully government business, Stewart called his base collect to report his survival. Citing regulations, the base operator refused to accept the call. Forest ranger Walker, Stewart’s host, graciously foot the bill. He then drove Stewart to the Waltersboro, South Carolina hospital where he was treated briefly (his hands were soaked in very cold water, appropriate for frostbite). From there he was picked up by an Air Force helicopter and taken back to his base. After a twelve hour 250-mile trip by fighter plane, parachute, foot, pickup truck, helicopter and sedan, he was back where he started. He remained in the hospital for a month while doctors worked successfully to save his fingers. It was touch and go, however, and at one point they recommended amputating all or parts of five of his badly swollen and discolored fingers. Stewart was horrified at the prospect and demurred strongly, emphasizing his point by threatening to desert from the hospital, an offense for which, history tells us, U. S. service men have in the past been executed.

Afterwards

When the B-47 was examined on the ground in the light of day, it was apparent it had suffered much more damage than could be seen from the cockpit in the middle of the night. The collision ripped out six square feet of the right wing and the right main wing spar was broken. The point of contact was just where the external fuel tank was attached to the wing, known as a "hard point". Out to this point the wing is reinforced to take the 10,000-pound weight of the fully loaded fuel tank. Had the point of contact been outboard of the hard point, it seems likely that the wing would have been severed. Debris from the collision also ruptured the right rear fuel tank, empty at the time, and ripped numerous holes in the tail section. The plane never flew again.

As for the F-86, one might reasonably imagine that a plane with both wings missing would simply dive straight into the ground and disintegrate. In fact, it did not. Apparently the tail surfaces provided some gliding capability and, bizarrely, the wingless aircraft hit the ground nearly horizontally. As the accompanying photograph shows, the fuselage is still recognizable and the cockpit is not crushed. It is conceivable, although highly unlikely, that Lieutenant Stewart could have survived the crash.

In addition to recovering from frostbite, Stewart was obliged to face an accident board. The proceeding was designed to prevent future accidents rather than affix individual responsibility. Stewart was not convinced of the board's benign purpose, suggesting, "What they wanted to do was fry my young (posterior)". That became impossible when the device that recorded the plane's radar images was found several weeks later (it had been blown out of the aircraft during ejection), confirming that the F-86's radar had indeed focused on the B-47 about a mile away and somehow missed Richardson's looming aircraft.

Yes, but Suppose a Fish *Does* Kick it?

A search was launched immediately for the missing weapon. The Navy looked for it in an area of three square miles over a period of nine weeks. On April 16, 1958, the bomb was declared "irretrievably lost". The best guess of Department of Energy engineers was that the weapon is buried nose-down probably 5-15 feet below the seabed some 16 miles from downtown Savannah. The low level of concern about this thermonuclear device, with a design strength 60 times that of the Hiroshima bomb, was indicated by the fact that the yachting competition in the 1996 Summer Olympics was held directly above this area. In 2004, retired Air Force officer Derrick Duke notified the Department of Defense that he had located a radiation hotspot that could mark the bomb's resting place. This time the search was limited to an area the size of a football field. Several months later Air Force reported it had found no trace of the missing weapon.

Still, it may seem ominous that a hydrogen bomb lurks near downtown Savannah but there are several reasons not to be too fearful. First, indications are that this particular bomb required two capsules of bomb grade uranium for a nuclear explosion. One of these capsules was fixed permanently inside the weapon when it was manufactured and

the other was to be stored in the plane's "birdcage", physically separated from the weapon. In case of war, the second capsule would be removed from its storage area and physically inserted into a quick-release opening in the weapon. Howard Richardson adamantly denies that the second capsule was even on the aircraft for that mission. Second, weapons-grade uranium is a strange substance. If is present in more than a specified critical mass it explodes spontaneously with massive power and the familiar mushroom cloud. If the same mass of uranium is reduced by, say, ten percent it becomes dangerous only if eaten – in the same non-radiation way that other heavy metals such as lead and mercury are bad for the health. The radiation given off by a less than critical mass of uranium is primarily alpha particles that, according to Billy W. Mullins, the Air Force Director for Strategic Security, "can't penetrate tissue paper". He added that the low radioactivity of the uranium in the missing weapon would make it unsuitable, if ever recovered, for a terrorist's dirty bomb.

Careers

The accident had no discernable negative effect on the careers of either pilot. Howard Richardson was promoted to the command of a B-47 squadron; moved on to fly B-52s; and became, somewhat ironically, Commander of the Air Force Nuclear Weapons School. He then earned his MA in business administration, served in senior financial management positions with the Air Force in both Europe and the United States and retired as a full colonel after 31 years of service. Clarence Stewart went on to fly 130 and a half* combat missions. He earned the Silver Star, became a fighter squadron commander and retired after serving over 21 years. Since then he has owned restaurants, bought and sold Florida land and become known locally for his creative services to the English language.

Howard Richardson is the proud possessor of what must surely be one of the strangest framed objects in the world – a copy of the receipt he signed for the nuclear weapon dropped off Savannah. The document (Atomic Energy Commission form AL-569, revised 8-57) acknowledges his receipt of weapon serial number 47782 on February 4, 1958. It provides him, prophetically, with an office to contact in case the bomb should somehow get lost.

- The one half comes from a mission over Laos when he was obliged to bail out after his engine failed over enemy territory. It is not clear whether hostile fire or a bad bearing caused the engine to quit, but Stewart suspects the latter. He used an unusual tactic to keep his plane from going down in enemy territory. His aircraft, an F-105, had an afterburner to provide an extra burst of power to climb to altitude or for a dogfight. The afterburner functions by dumping fuel into the hot rear engine chamber where it ignites spontaneously (and burns inefficiently) to provide extra thrust. Having lost power, Stewart turned on the afterburner *without* the engine. The chamber was hot enough to light the fuel and the arrangement provided just enough thrust to get his plane the remaining 30 miles to Thai territory where, yet again, he bailed out.