

## THE DAY WE NUKED MARS BLUFF

By Clark Rumrill Special to The Washington Post  
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On the afternoon of March 11, 1958, the Gregg sisters, Helen, 6; Frances, 9; and their cousin Ella Davies, 9, were in the playhouse their father had built for them in the woods behind their house outside Mars Bluff, South Carolina. About 4 pm they tired of the playhouse and moved 200 feet to the side yard. This prevented them from becoming the first Americans killed by a nuclear weapon dropped on U. S. territory. A United States Air Force B-47E medium jet bomber serial number 53-1876 accidentally dropped its nuclear weapon in the woods behind the Greggs' house at 4:19 pm. The high explosive trigger in the bomb blew up on contact with the ground, leaving a crater 70 feet across and 35 feet deep and injuring all three of the girls. The only remaining traces of the playhouse were a few twisted shards of the corrugated metal that had been its roof.

At 8:00 am that morning, Captain Earl Koehler, the pilot; Captain Charles Woodruff, co-pilot; Captain Bruce Kulka, navigator/bombardier; and crew chief Staff Sergeant Robert Screptock, arrived at Hunter Air Force Base just outside of Savannah, Georgia, to fly their B-47 in operation "Snow Flurry" that afternoon. Snow Flurry was not a routine training mission but rather part of a "Unit Simulated Combat Mission and Special (meaning nuclear) Weapons Exercise". Briefings for the mission began ten days before take-off and, among others, two generals appeared to give briefings on the exercise. Aircraft 53-1876, accompanied by three other B-47s from the 375<sup>th</sup> Bombardment Squadron, was to carry a nuclear weapon the Bruntingthorpe Air Base, England, after conducting a mid-air refueling en route off the east coast of Canada. Before landing, the crew was to make a "bomb run" over the London bomb scoring facility, transmitting an electronic signal to simulate the bomb release. Computers on the ground were to determine the accuracy of the drop and score the crew accordingly. Had the mission been completed, the crew would have had an exhausting, tension-filled 18-hour duty day.

### The Bomb

Nuclear weapons, then as now, contained a high explosive trigger to manipulate the uranium/plutonium core to a critical mass and initiate the chain reaction of a nuclear explosion. Perhaps the greatest trick in weapon design is to deliver the great force of the trigger explosion so the laws of physics oblige the weapon to start the chain reaction, not just blow itself apart. Theoretically, there were two types of explosives that could be used in the trigger. One could be set off by concussion, such as a bullet or hitting the ground at high speed. The other explosive, the type the military almost invariably insists upon for its regular ammunition, can take great physical abuse – including a bullet hit – without going off. Unfortunately, explosives used for the triggers of most nuclear weapons can be set off both by fire and concussion. When the bomb hit the ground near Mars Bluff, its high explosive trigger indeed blew up. There was virtually no danger of a nuclear explosion in this sort of accident; the detonation simply blew the device apart. Only an electrical charge of the proper voltage and amperage, coupled with exquisite timing and a series of arming events taking place in a specified order, could initiate a nuclear explosion.

## The Plane



The six-engine B-47 was the first modern jet bomber. Its engines were mounted below its swept wings in pods, features now nearly universal among civilian passenger aircraft. The initial production model came out in December 1949 and, at 630 miles an hour, its top speed was higher than any jet fighter in the world at the time. It had a three-man crew (with room for one passenger) and was capable, barely, of crossing the Atlantic without refueling. There were 2042 B-47s manufactured of which 203 were subsequently destroyed in accidents. Somewhat curiously, a B-47 could not dump fuel in case of an emergency, as could civilian passenger aircraft. Nor could it land with a large fuel load. The plane's wings could flex through a ten-foot arc in flight but landing with a full fuel load, none of which was in the wings, would likely cause structural failure. Once a fully loaded B-47 left the ground on take-off, the choice was between flying for several hours to burn off fuel, or crashing. Nuclear weapons in the 1950s could add another five to thirty thousand pounds depending on the type and number of them in the bomb bay, making the aircraft even harder to fly. Perhaps feeling some guilt over its failure to provide the B-47 with the fuel-dump safety feature, the Air Force stipulated that on take-off and landing the crew should be able to quickly dump its nuclear weapon(s), at least somewhat improving the pilot's ability to control the aircraft.

## Hanging onto the Bomb

Nuclear weapons were held in a B-47's bomb bay by two systems: 1) a reliable but complicated pneumatically powered electro-mechanical catch and 2) a steel locking pin operated by a lever in the cockpit. With the locking pin in place, it was impossible for the crew to drop the weapon, deliberately or otherwise. With the pin out, the crew could jettison the weapon almost immediately by lifting protective covers and toggling switches.

## The Strategic Air Command



The Strategic Air Command (SAC) was founded in 1946 to provide a force capable of nuclear retaliation against the Soviet Union. In October 1948, Curtis LeMay took over as commander. LeMay's not particularly affectionate nickname from World War II was "hard ass", a title he earned by what his airmen considered a fanatic devotion to training. For example, within hours after his crews returned from bombing missions over German occupied Europe, he would often send them off on practice missions to sharpen their gunnery, navigation and formation flying. LeMay was an early advocate of high altitude "pinpoint" daylight bombing. Initial U. S. losses using this approach were horrific, however, running to 20% and more of the aircraft on a mission. In addition, the bombs often missed their targets by startlingly wide margins. To combat the high losses, LeMay developed a scheme of flying bombers in tight formations for hundreds of miles. This permitted them to protect each other by concentrating their guns on attacking fighters. To improve bombing accuracy, he came up with the idea of "lead" navigation. Selected crews became highly familiar with the approach routes to specific targets, permitting them to use railroads, villages, junctions, lakes and other navigation clues often only fleetingly seen through the seemingly incessant European cloud cover. The entire formation would fly the final portion of a bomb run straight and level with no evasive maneuvers, dropping their bombs when the lead aircraft did so. LeMay's tactics, developed when he was a Colonel commanding one of the four U. S. bomb groups in England, were revolutionary and subsequently became common U. S. practice for the rest of the war.

Not surprisingly, LeMay brought the deep faith in training he developed during World War II to his new job at SAC. Virtually every aspect of the training he devised for SAC was quantified, with the points awarded counting heavily in promotions. The results of particularly important activities like operation "Snow Flurry" were relayed to SAC headquarters electrically, where SAC's senior officers, including the commander himself, reviewed them aggressively. If a mission did not go well for any reason, the local commander could well receive a direct message from the commanding general himself asking the precise reasons for the "failure". Because the local commanders were typically colonels with prospects for promotion to general, they were distinctly motivated to have their crews perform their missions as planned. The aircrews themselves, naturally, also felt pressure from their own career aspirations.

Oooops!



The nuclear weapon that landed on Mars Bluff was a twenty-kiloton Mark 18, an older fission (non-hydrogen) design considered highly reliable. The bomb weighed 8500 pounds, was just over 10 feet long and had a chubby maximum diameter of five feet and one inch. Starting at 8 am on the morning of March 11<sup>th</sup>, a specialized two man loading crew took one hour and seven minutes to load the bomb into Air Force 53-2876. The loading team had trouble engaging the steel locking pin and called the weapons release system supervisor for assistance. The supervisor took the weight of the weapon off the plane's bomb shackle mechanism, supporting it with a sling. He then "jiggled" the pin with a hammer. The bomb's weight was then put back on the shackle and pre-flight checks continued. Neither the bomb loading crew nor the aircrew ran the locking pin through its engage/disengage cycle with the bomb's weight back on the shackle. For the crew to receive maximum points for its unit under the ground rules, the bomb loading and all other pre-flight checks had to be finished by 10:30. It is difficult not to suspect that institutional pressure to gain points led to the omission of this step.

After the bomb was loaded and the pre-flight checks completed, the aircraft was taxied to a guarded holding area. The crew then went to weather and operational briefings, had lunch and returned to the plane about 2:40. After the crew performed a mandated extensive check of the exterior and interior of the aircraft, at 3:42 Captain Koehler started his engines. A few minutes later, as required by regulation, co-pilot Charles Woodruff rotated his seat to face aft and pulled the lever to disengage the locking pin from the nuclear weapon. It could now be dropped instantly in case of an emergency to lighten the aircraft. At 3:53, the plane took off to join three other B-47s for the flight to England. When the B-47 reached an altitude of 5000 feet, co-pilot Woodruff again rotated his seat to re-engage the locking pin, preventing any accidental bomb release. Woodruff worked the locking lever unsuccessfully for five minutes as the B-47 climbed to 15,000 feet to join the other aircraft. At this point the crew knew it had a problem. The pilot could have aborted the flight and returned to base. Still, if the locking pin could be inserted somehow, the flight could continue and the crew would still receive maximum points for the mission. The pilot instructed the bombardier, Captain Bruce Kulka, to go into the bomb bay to try to seat the locking pin by hand. This was not a trivial decision: the bomb bay was not pressurized so the entire plane had to be depressurized and the crew had to go on oxygen. Further complicating matters, the entrance to the bomb bay was so narrow that a parachute could not be worn. The task was doomed from the start; later testimony indicated Kulka, like virtually every other B-47 crewmember in the Air Force, had no idea where to find the locking pin in the large and complicated bomb release mechanism. After a tense twelve minutes searching for the

pin with a flashlight (there were no lights inside the bomb bay), the bombardier decided, correctly, that it must be high up in the bomb bay, hidden by the curvature of the bomb. Being short of stature, he jumped to get a handhold so he could pull himself up to look where he thought the locking pin should be. Unfortunately, he chose the emergency bomb release mechanism, just above the bomb, for his handhold. The bomb dropped from its shackle and rested momentarily on the closed and locked bomb bay door with Captain Kulka splayed across it in the manner of Slim Pickens in *Dr. Strangelove*. Kulka reflexively grabbed at a personal travel bag stored in the bomb bay to pull himself up. In seconds, the weight of the bomb broke open the bomb bay doors and the bomb dropped from the aircraft.

The bag Kulka was holding came loose and as he was sliding after the bomb without his parachute, he grabbed the edge of the catwalk and hauled himself up. Moments later the plane was rocked by the shock wave of the blast when the bomb hit the ground and detonated. Almost simultaneously, a shaken Kulka went on the intercom to confirm what the crew was just beginning to fear; that their weapon was no longer with them.

In the case of an unscheduled release of a nuclear weapon, Air Force regulations required the crew to notify its base immediately by a special coded message. Because the procedure had never been used in its experience, the operations center at Hunter Air Force Base did not recognize the strange incoming message. As a final indignity, the pilot was reduced to radioing an open, uncoded message to the civilian tower at the Florence airport (Florence is six miles west of Mars Bluff), asking them to notify Hunter by telephone that aircraft 53-1876 had lost “a weapon”. The plane then turned back to photograph the site of the explosion with its aerial camera. This was not difficult, the plume was easily visible from three miles up. Because the plane could not dump fuel, it circled for a further 2 hours and 26 minutes before landing uneventfully at Hunter.

. . . . and on the ground



The concussion from the explosion injured all five members of the Walter Gregg family and their maid. Mrs. Gregg was sewing in the front parlor; the maid was in the kitchen and son Walter Jr. was standing next to his father in the tool shed. They were all taken to the Florence hospital where Ella, who had 31 stitches, was kept overnight and the others released. Although the Greggs certainly knew their problems stemmed from some sort of explosion, it was not until that evening at the hospital that Walter Gregg learned that they had been bombed by the U. S. Air Force.

The Florence Morning News knew the real cause of the problem several hours before the Greggs. The call came into the paper just before 5 pm and was taken by Thom Anderson, then a cub sports writer and later the paper's managing editor. Anderson was the only reporter in the newsroom, the rest were down the street at the federal courthouse for the second day of the civil rights trial of Horry County Sheriff John T. Henry and eight of his deputies. They were accused of depriving four prisoners of their civil rights by beating them\*. Anderson went immediately to the courthouse to tell his superiors of the explosion. They opined that an external fuel tank had dropped and he could check on it in the morning. Unconvinced of the triviality of the event, Anderson rounded up a freelance photographer and took off for Mars Bluff. They got a ride to the scene of the accident with a senior Air Force officer who had just arrived in Mars Bluff and needed directions. State police and Civil Air Patrol volunteers waved them through the just-established checkpoint. Anderson quickly discovered the nature of the explosion, the photographer got pictures of the crater and the wreckage of the house, and the next day his paper had four articles on the accident, with photographs, on its front page -- better than the entire multi-day coverage of the "New York Times". In addition to the thrill of covering what was arguably the biggest story in Florence in generations, Anderson was flattered to field telephone inquiries about the incident from the foreign press. The experience became even more positive when he received a number of checks from these news organizations for his assistance, a pleasure heretofore unknown to Florence cub sports reporters.

\* Despite photographs of the injuries and testimony by a number of eyewitnesses, the sheriff and his deputies were acquitted by a jury of their all white, all male peers.

The reception of the B-47 crew back at their base was perhaps even more difficult than the flight. By regulation, all crewmembers on operational missions carried loaded 38 caliber pistols. As the crew climbed down the ladder from the aircraft after landing, they were met by armed military police and relieved of their weapons. They were then taken to a room in the base operations center with mattresses hastily arranged on the floor and told they would be obliged to remain in this room "at least overnight. They were not allowed to contact their families or anyone else. The fear was that they were saboteurs, had dropped the bomb deliberately and were bent on who knows what other mayhem. Later that evening, General LeMay phoned Captain Koehler directly to question him on the incident. LeMay, perhaps the only operational commander in the Air Force who had actually performed maintenance on his bombers, understood Koehler's explanation and the crew was released.

The accident was featured prominently in the national and international press, including ground level photos of the destruction of the Gregg house and aerial shots of the crater in relation to the house, tool shed and garage. The New York Times' Harrison Salisbury commented and the Prime Minister of Great Britain reassured the House of Commons. Overall, what is surprising is the coverage of the event essentially disappeared after three days and, despite conflicting statements from the Air Force, the press did not investigate whether radioactive material had been released into the atmosphere and, if so, how much. This casual acceptance stands in stark contrast to the media frenzy that accompanied the accident at Three Mile Island almost exactly twenty-one years later. In point of fact, classified Air Force radiations studies released in 1997 indicate that radiation after the explosion was only marginally above background levels. Still, less than 5% of the bomb was recovered and airborne particles of heavy metals, if there were any, are a known health problem. For the flight, the fissionable nuclear core of the weapon had been physically removed and stored elsewhere in the aircraft in what was called the "birdcage". In a war situation the crew would have physically removed the nuclear core, which weighed about 27 pounds, from the birdcage and inserted it into the bomb

## Mars Bluff

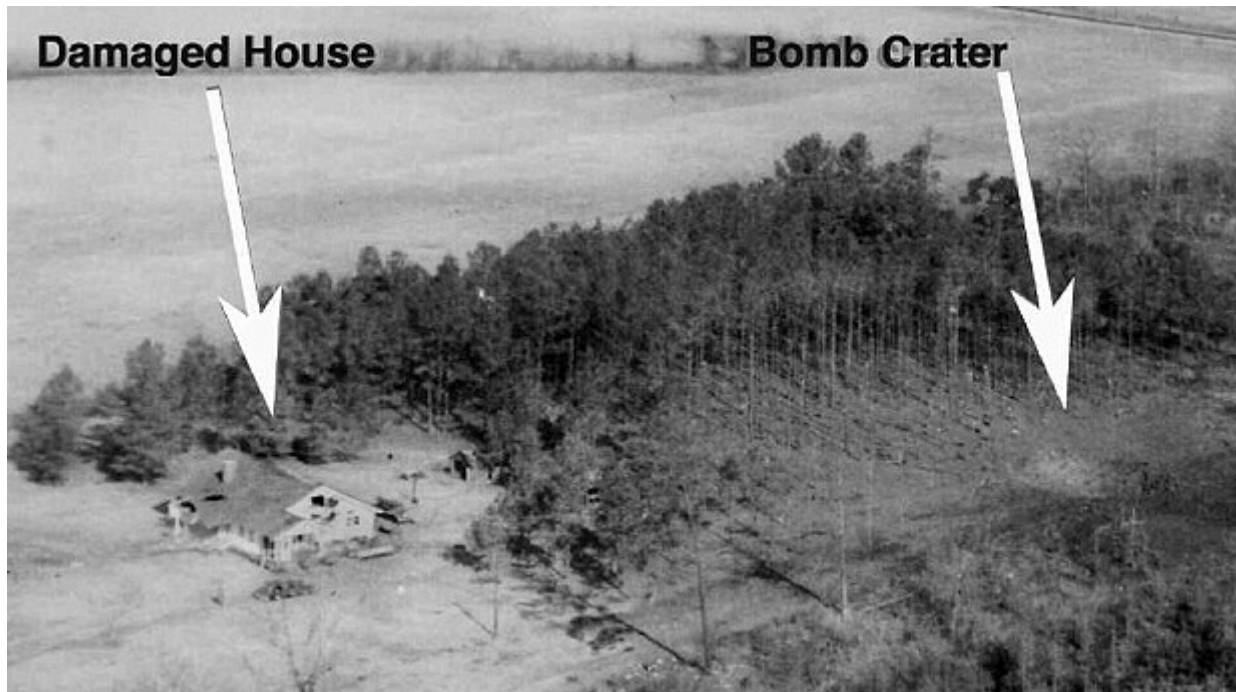


Mars Bluff, South Carolina, is a rural community too small to have a post office. Nor does it show up on the Rand McNally road map of either the United States or South Carolina. One might suppose that a nuclear weapon drop would be the only thing to distinguish it from thousands of similar localities across the country. On the contrary. A distinguished work of history, “African Americans at Mars Bluff, South Carolina” by Amelia Wallace Vernon, was published in 1993. This slim but critically acclaimed volume documents the private cultivation of rice by slaves in Mars Bluff and their descendents into the 20<sup>th</sup> century.

It develops convincing evidence that the technical expertise to raise rice in South Carolina (and Louisiana) came from slaves brought from middle Africa, where rice was the staple crop. She further documents the U. S. government’s promise of land to the newly freed slaves (the origin of the phrase “forty acres and a mule”) and outlines how the abrogation of this commitment inevitably led to the creation of an African American underclass deprived of economic bargaining power.

In her book, Mrs. Vernon locates the rice fields carefully and several are within a few hundred yards of where the bomb landed. Given the size of Mars Bluff, it is not too surprising that she is also a cousin of Walter Gregg, on whose property the bomb landed.

## Money... You Think We Owe You Money?



When the bomb entered his back woods, Walter Gregg was a 37-year-old conductor with the Atlantic Coast Line Railroad. He had served in the Army as a paratrooper in World War II and married Ethelmae Helms, whom he met on a blind date in 1942. In January 1953, the Greggs moved into the house they built on 130 acres of land that had been in the Gregg family for over 100 years. It had a solid masonry foundation, Cyprus planking and wood flooring, even in the attic. Plans were made to add dormers and finish the second floor when family needs dictated and finances permitted. In its own internal documents on the accident, the Air Force described the Greggs' house as: "House, frame, 224 feet from impact point, extremely well constructed of first class material".

In the immediate aftermath of the incident, the Air Force said it would settle all claims "promptly and fairly" and a senior legal officer was sent from the Air Materiel Command in Ohio, ostensibly to do this. This officer, in a harbinger of things to come, started by denying the Greggs a housing allowance. They had, he noted, moved in with Mr. Gregg's brother on the night of the blast and thus were incurring no extra expense to themselves. He then moved on briskly to the Greggs' property claims. In 1958, the Air Force paid claims to its own personnel based only on the depreciated value of the damaged or destroyed item, not its replacement cost. The claims officer applied this practice scrupulously with the Greggs and insisted they list every item damaged along with its date of purchase and original price. This included items of special personal value such as Mrs. Gregg's collection of cut glass inherited from her grandmother, her wedding presents, her crocheted tablecloths and her collection of some seventy demitasse cups. The Greggs' Chevrolet sedan was a total loss from blast damage. The Air Force paid for a rental car for one week. Enough time, the claims officer averred, for the Greggs to process an insurance claim and buy a new car. Satisfied it had protected its own honor and that of the taxpayers, the Air Force offered the Greggs a total of \$44,000 for the destruction of their house (it was moved about 8 inches off its foundation), garage, tool shed, clothes (Although not ripped by the blast, fiberglass insulation was blown into all the clothing in the closets. Even after they had been dry cleaned, the fiberglass remained, causing red welts whenever the fabric touched the skin.), six to fourteen chickens (The chickens were free range and some were vaporized in the explosion. The Air Force seemed unable to commit itself to a specific number without a body



count.) and everything else. The Greggs believed this amount vastly undervalued the loss of a lifetime of mementos, their presents and antiques and the disruption and sustained inconvenience they had suffered. They refused the offer and turned to their congressman for assistance. He sponsored a private bill permitting the Greggs to sue the U. S. government. The bill passed, President Eisenhower signed it, the Greggs hired a lawyer and sued the Air Force in federal court. Three years and three months after the bomb had dropped, the Greggs finally received the amount the Air Force had originally offered plus an additional \$10,000.

Within days of the incident, the Air Force published a regulation requiring that locking pins be inserted in nuclear weapon shackles at all times, including take offs and landings.

It seems reasonable to suppose that if the Mars Bluff incident had occurred in the twenty first century, press coverage would have highlighted the Air Force's parsimonious treatment of the Greggs' claims. The public, given the opportunity to contemplate the matter on "Sixty Minutes", might have believed that the Greggs had a point when they claimed their losses fell beyond the confines of straight line depreciation.

### Where Are They Now?

After the bomb destroyed what was, really, their dream home, the Greggs gave up country living and move to Florence where they now live in a neat brick bungalow. The Air Force prohibited the crew from discussing the incident with the press while they remained on active duty, but several members of the crew did travel to Florence individually to pay their respects to the Greggs. The bombing of Mars Bluff seemed to have little, if any, negative effect on the crew's careers. Captain Koehler remained in the Air Force for 12 additional years and retired as a lieutenant colonel; Captain Woodruff left the Air Force for civilian life in 1959; Captain Kulka served 13 more years, retiring as a major; and Sergeant Sreptock stayed in the Air Force until 1982, retiring at the highest non-commissioned rank. In 1997, the Greggs sold the four-acre plot upon which their house was built and where the bomb crater was located. The new owners have developed the parcel into a small community of modular homes known as "Francis Marion Forest". The crater, not greatly diminished, remains after over 50 years and can be seen at the one o'clock position as you enter the circle from the county road. In late summer the crater is almost dry but after the winter rains it fills to within a foot or two of the top, a large but benign reminder of the Cold War and a day when the press could actually underwhelm a subject.

