A Moment in Time: Fire Balloons, Smokejumpers and Moon Trees

By Jeffrey S. Williams

On Saturday May 5,1945, Archie Mitchell, the 27-year old pastor of the Christian and Missionary Alliance Church in Bly, Oregon, took his pregnant wife Elsie and five children from the local 4-H organization on a picnic in the Fremont National Forest on land owned by the Weyerhauser Timber Company.

Mitchell dropped off his passengers by the side of the road, turned the car around and was unloading the lunches when Elsie called out to him to come quickly because the children found something. Before Mitchell was able to make it to them, an explosion shook the ground and threw needles, twigs and sticks into the air. The five children were killed instantly and Mrs. Mitchell died within minutes from a “15-kilogram high explosive anti-personnel bomb from a crashed Japanese balloon.”

The “thing” was a balloon bomb designed and built by the Imperial Japanese Ninth Army’s Number Nine Research Laboratory fusen bakudan “fire balloon” program, one of 9,300 that the Japanese built and released between November 1944 and April 1945. The balloons were 70-feet tall with a 33-foot canopy built out of paper, inflated with enough hydrogen to fly at altitudes of 30,000 feet or greater in order to cross the Pacific Ocean on the jet stream, and had anti-personnel and incendiary devices attached.

Each balloon was inflated and released in Japan, took three days to cross the ocean, and was supposed to create wildfires and kill small groups of people in order to create panic. The program was designed as revenge for the U.S. Army’s April 18, 1942 Doolittle Raid bombing of Tokyo, was, in itself, was a response for the Japanese bombing at Pearl Harbor.

Elsie Mitchell and the five 4-H children were the only known human casualties from the fusen bakudan program, which was the first known weapon to possess an intercontinental range, and the weapon with the longest range in the history of warfare, a record which lasted until 1982.

Of the 9,300 released fire balloons, fewer than 1,000 made it across the ocean though they have been discovered in 26 states, Canada and Mexico, including one that made it as far east as Michigan. More than 300 balloon bombs have been discovered with the most recent one found in the Monashee Mountains near Lumby, British Columbia in October 2014.

In response to the Japanese fusen bakudan program and fears of wildfires erupting throughout the western states, the War Department created Operation Firefly in which they trained members of the 555th Parachute Infantry Battalion, an all-black paratroop battalion, how to fight the wildfires set by the balloon bombs after jumping out of Douglas C-47 Skytrain aircraft.

Based out of Pendleton Field, Oregon, and Chico, California, the 555th PIB made approximately 462 jumps into 28 wildfires during the 1945 fire season, 18 from Pendleton and 10 from Chico. None of them were ignited by fire balloons. One member, Malvin Brown, a medic, was killed on August 6, 1945 near Roseburg, Oregon, during a jump when he fell 150 feet out of a pine tree after his parachute got snagged. Brown is listed as the first smokejumper to die in the line of duty.

Operation Firefly didn’t do anything to quell the fire balloons, but mainly served to bolster the young U.S. Forest Service smokejumper program, which had only been operational for a few years.

After years of trying to persuade his superiors to develop an Airborne program similar to what he had witnessed in post-World War I Germany, Major William C. “Bill” Lee” from the U.S. Army’s Chief of Infantry Office in Washington, D.C., was tasked with creating the U.S. Army’s Airborne program in June 1940 after President Franklin D. Roosevelt was fascinated with Germany’s blitzkrieg operations. Lee would later be known as the “Father of Airborne” and first commander of the 101st Airborne Division, but the U.S. Forest Service was already in the process of training wildland firefighters to parachute into remote wilderness areas.

Even though Rufus Robinson and Earl Cooley are credited with having made the first smokejump in the Nez Perce National Forest on July 12, 1940, the training they received would become a baseline for Lee’s design of the Airborne units.

Thirteen forest service employees made it through the training in 1940 and jumped into nine fires. Six were based in Winthrop, Washington, and seven were staged out of Moose Creek, Idaho. The next year, additional funding meant additional troops, and 26 smokejumpers were on the job and again jumped into nine fires, though all the training was consolidated to one center in Missoula, Montana.

The beginning of World War II sapped the forest service of qualified personnel. Only five smokejumpers returned for the 1942 season. Even though 33 people went through the training, only a handful qualified for service.

In 1943, there were only five experienced smokejumpers left, including the instructor, and four candidates who passed the physical. However, a new source of personnel came through conscientious objectors from the Civilian Public Service camps. Three groups of 20 men each, plus six cooks, a CPS camp director, assistant director, dietician and camp nurse were chosen from an initial applicant field of 350. Two additional bases were added at Cave Junction, Oregon, and McCall, Idaho.

A year later, the ranks expanded to 110 trained personnel and the program was no longer considered to be experimental as the U.S. Forest Service made it an official component of its agency.

Between 1933 and 1936, the Civilian Conservation Corps built the Redwood Ranger Station in Cave Junction, Oregon in the Siskiyou National Forest to replace the Page Creek Ranger Station. Then on September 9, 1942, a lone Japanese plane operating from a submarine dropped a bomb near Mount Emily in the Siskiyou National Forest igniting a wildfire, which took fire crews nearly five hours to reach.

As the smokejumping program was becoming operational, the forest service created an airstrip four miles south of the Redwood Ranger Station. It is unknown whether the Mount Emily bombing had anything to do with the creation of the base or whether the location selected was because of its proximity to the Redwood Ranger Station in the middle of a large inaccessible forested region known as the “fire forest of the nation” for the frequency that lightning strikes create wildfires. It became operational in 1943 along with three other smokejumping bases in the Northwest

After the war ended, the construction of the Cave Junction Smokejumper Base continued as the early jumpers used the facilities at the Redwood Ranger Station, using the base only for training and missions. The smokejumpers built a bunkhouse to replace the tents at the Redwood Ranger Station, along with bathrooms and a cookhouse. Fifteen men, 14 jumpers and one maintenance man staffed Cave Junction during the summer of 1945 and succeeded in making 51 practice jumps and 31 fire jumps that summer.

The Civilian Public Service program ended in 1946, but the forest service now had a new batch of recruits to choose from – returning military veterans. While the size of the force remained the same as the previous year, around 220 personnel, about half of them now had military service.

Then on August 5, 1949, an event occurred that would forever change the smokejumping program.

At 3:10 p.m., Earl Cooley who had previously recorded the first successful jump into a fire, was aboard a C-47 transport aircraft (tail number NC-24320) that departed Hale Field, Missoula, Montana, this time only as a spotter/kicker, with 15 smokejumpers. Cooley and R. Wagner “Wag” Dodge, the crew’s foreman, selected a jump site at the head of Montana’s “Mann Gulch,” to fight a fire that had been called in 80 minutes earlier.

The temperature was near 100 degrees with only 4 percent humidity and even though the jump was considered to be routine, it wasn’t. After meeting up with James Harrison, a fire guard from the Meriwether Canyon Campground, the firefighters began to attack the fire at 5:20 p.m. after a quick lunch break. About a half hour later, Dodge realized that the fire had already made it to their side of the canyon and as the winds whipped up, the crew was in danger if the fire were to blow up.

Dodge ordered everybody to go back the way they came as the fire was about to blow up on them. They ran for 300 yards when Dodge instructed everybody to lighten their load. The flames were 50 feet high and moving towards them at the rate of 50 yards every 10 seconds, covering 3,000 acres in just 10 minutes.

Safety was to be found at the top of the ridge. Though Dodge, the seasoned foreman, created the first escape fire, figuring that if the fuel around him would burn out before the main fire reached them, which would create a bypass, they would have a chance at survival. Unfortunately, the others didn’t hear him and continued racing to the top of the ridge.

Robert Sallee, Walter Rumsey and Dodge were the only survivors of the Mann Gulch fire. Harrison and 12 smokejumpers all died 300 yards from each other of smoke inhalation. The oldest was 28-years old.

Sallee and Rumsey were back on duty fighting fire a week later, but Mann Gulch cast a dark shadow over the U.S. Forest Service’s wildland firefighting and smoke jumping programs. It was the first time in the history of the program that firefighters had died. New training measures were instituted in an attempt to prevent situations like this happening again.

Two years after Mann Gulch, 17-year old Stuart Roosa and some of his classmates from Claremore, Oklahoma applied for summer jobs with the U.S. Forest Service after graduation. They were sent to Idaho to work on a project designed to control blister rust, a disease devastating to pine trees, and were also assigned to a ground-based wildland firefighting crew. It was during this time when he was introduced to a team of smoke jumpers.

Roosa became interested in the program the next year when he visited Cave Junction and stayed in the bunkhouse with some of the jumpers. He applied for and was accepted into smokejumper training in 1953.

"Stuart went through rookie training fine and handled everything better than most except for tree-climbing classes. He finally passed the tree-climbing by sheer determination,” said fellow smokejumper Jimmie Dollard.

Roosa made four active fire jumps in Oregon and California during the 1953 season, his only season as a smokejumper. He had also applied for the U.S. Air Force cadet program and was accepted.

Dollard recalled a concern that Roosa had about the psychological examination.

“He was concerned about a particularly tough psychologist who had rejected several candidates as unsuitable. When he asked Stuart what he had been doing, Stuart said that he had been a smokejumper and was asked to explain. When Stuart told him what smokejumpers did, the shrink stared in disbelief and said, ‘Okay, you shouldn’t have any trouble with flight training,’ and the planned two-hour interview was over in 10 minutes,” said Dollard.

Roosa had an exemplary Air Force career and was selected for NASA’s astronaut program in the class of 1966. He was the command module pilot aboard Apollo 14, which brought Alan B. Shepard Jr. and Edgar Mitchell to the moon. He retired from NASA in 1976 and passed away in 1994.

Yet there is still one important legacy from Apollo 14 that remains – Moon Trees.

Ed Cliff, who was head of the U.S. Forest Service at the time Roosa was selected for the Apollo 14 mission, know of Roosa’s background as a smokejumper. He asked Stan Krugman, staff director for forest genetics research, to approach Roosa and develop the Moon Tree program if the astronaut agreed to carry a small container of seeds in his personal preference kit. It was a forest service publicity-stunt as much as a basis for scientific inquiry. When Roosa agreed, Krugman sorted out loblolly pine seed, sycamore seed, sweetgum seed, redwood seed, and Douglas fir seed for the flight.

When the Apollo 14 command module splashed down in the Pacific Ocean on February 9, 1971, 450-500 tree seeds had made the trip to the moon and back.

The seeds were successfully germinated and soon NASA had around 420 seedlings in their nurseries. The first official Moon Tree was planted at 10:30 a.m. on May 6, 1975 at Philadelphia’s Washington Square Park, facing Independence Hall, and then the remaining ones were distributed across the country to state forestry organizations to be planted in conjunction with the nation’s bicentennial.

However, NASA did not keep a record of where the Moon Trees were planted until Dr. David Williams, curator of NASA’s Space Science Data Center began the process in 1996. To date, Williams has located around 65 Moon Trees in 22 states, the District of Columbia, and Brazil. A Douglas Fir was planted at the Cave Junction Smokejumper Base but it died. A second generation graft from the Moon Tree at the Roseburg VA Hospital was placed there in 2012.

The Moon Trees are a lasting legacy to Astronaut Stuart Roosa, all wildland firefighters and smokejumpers in the history of the U.S. Forest Service.

*NOTE: Dr. David Williams maintains the Moon Tree Register. If you know of a Moon Tree that is not on the NASA registry, located at* [*http://nssdc.gsfc.nasa.gov/planetary/lunar/moon\_tree.html*](http://nssdc.gsfc.nasa.gov/planetary/lunar/moon_tree.html) *he can be reached at* [*dave.williams@nasa.gov*](mailto:dave.williams@nasa.gov)