Collision on Final Approach

Ian E. Abbott

Naval Air Station Moffett Field, located 30 miles south of San Francisco, California, was a busy facility in 1973. The air station was the headquarters for all U.S. Navy patrol activity in the Pacific, and in this role it was home to many patrol squadrons flying the Lockheed P-3 Orion. Moffett Field was also home to NASA's Ames Research Center, which operated a wide variety of research and experimental aircraft at that time. On April 12, 1973, a Navy P-3C and a Convair 990 operated by NASA collided while on final approach to Moffett field, killing 16 of the 17 people aboard the two aircraft.

The Navy P-3C, 157332, was assigned to Patrol Squadron 47 (VP-47). It had departed Moffett Field for a training flight approximately five and a half hours prior to the accident. LT Stephen A. Schwarting was in command of the P-3, along with two pilots in training, a flight engineer, and two observers. LT Schwarting had been a naval aviator for five years, and at age 29 he had logged 2014 flight hours, 1014 of those in P-3 aircraft.

During the first part of the training flight, the P-3 operated over the ocean off of Big Sur, California. The P-3 and its crew then returned to Moffett Field to practice approaches and landings. At the time of the accident, the P-3 crew had been flying approaches to touch-and-go landings on runway 32L for about an hour and a half, circling in a left-hand pattern west of the air station. There were two parallel runways at Moffett Field, 32L and 32R. Only the right runway was equipped for instrument approaches, but on the day of this collision the weather was fair and the visibility was excellent.

While the P-3 was flying approaches on runway 32L, a Convair 990 operated by NASA was south of Moffett Field flying a straight-in approach. The Convair 990 was a flying laboratory, called Galileo, which was operated in conjunction with scientific programs at Ames Research Center. The Convair 990, N711NA, was delivered to NASA in 1964 and was one of four 990 models operated by NASA over the years.

On the day of the accident Galileo was returning from a two-hour flight over Monterey Bay to test a newly installed system for surveying migratory sea mammals. In past experiments Galileo had chased the 1967 solar eclipse, it had taken astronomers aloft to study comets, and it had last been used in a joint Soviet-American survey of the Bering Sea. Galileo's pilot was James P. Riley, age 28. There were a total of eleven men aboard Galileo: seven were NASA employees, and there were two employees each from Teledyne, Inc. and Northrop, Inc.

Galileo's pilot first contacted the Moffett Field tower at 1446, stating that he was ten miles south of the air station and requesting a straight-in approach. At that time the air traffic controller instructed Galileo's pilot to approach runway 32R and to contact the tower when he was seven miles south of the air station. There were other aircraft in the pattern at the time, and shortly after his exchange with Galileo the controller told another aircraft that there were "numerous P-3s left traffic for runway 32."

At 1448, the pilot of the P-3 contacted the tower and stated that he was "turning base, wheels down, touch and go." The controller acknowledged that transmission and instructed the pilot to "continue for the left side." Seconds later, Galileo's pilot contacted the controller and stated that he was seven miles south of the air station. The controller acknowledged the transmission from Galileo, and after an exchange with another aircraft the controller instructed Galileo's pilot to "continue for the right side."

At 1449, Galileo's pilot contacted the tower and said "gear down and locked." The controller replied by informing the pilot of the wind speed and direction, and then without explanation he stated that Galileo was "cleared to land 32L." The Galileo's pilot did not question the change in runway clearance, but acknowledged it by stating "32L, thank you." A few moments later the air traffic control transcript contains a transmission that is probably from LT Schwarting's P-3, stating "…touch and go on left side." The tower acknowledged this transmission by instructing the P-3 to "continue." At this point the two aircraft began to converge on the left runway approach.

At 1450, the air traffic control transcript contains an unidentified transmission, “Tower, you got that” followed by a second, garbled transmission. The controller replied to these two transmissions by saying “go around, go around we’ve…” The controller then transmitted the instruction “all aircraft in the pattern climb and maintain 1500.” By that time Galileo and the P-3 had collided and crashed together about one half-mile south of the runway.

At the time of the collision Galileo was apparently above the P-3, descending on a converging path. According to the official Navy investigation, the fuselage at the base of the P-3’s vertical stabilizer showed evidence of two tire marks that matched Galileo’s dual nose gear tires. In addition to that, three pieces of the P-3’s fuselage were found embedded in Galileo’s nose gear.

According to eyewitnesses, the P-3 pulled up sharply in the moment before the collision, perhaps in an evasive action. Galileo struck the upper aft fuselage of the P-3 and the two aircraft crashed entangled on the 12th tee of the Sunnyvale Municipal Golf Course. A large fire immediately engulfed the two wrecked aircraft. Although there were people playing golf nearby, no one on the ground was hurt.

The crash scene quickly became chaotic. The two aircraft crashed just 200 yards from the Bayshore Freeway, and drivers left their cars to scale the fence and rush to the burning wreckage. Golfers, and people from nearby office buildings who had seen the crash also swarmed around the site. The large number of onlookers made access difficult for the fire crews responding from Moffett Field and Sunnyvale. At the time of the crash a group of firemen were watching a demonstration of a “jaws of life” rescue device at the Mountain View Fire Department training center. When they saw the crash they loaded the rescue equipment and went to the scene, hoping that they could assist.

All of the sixteen men who were killed died in the crash or in the fire that followed it. The one survivor was Petty Officer Third Class Bruce N. Mallibert, who was an observer aboard the P-3. One of the golfers at the crash scene found Mallibert seriously injured and lying unconscious outside of the wreckage. He mistakenly thought that Mallibert was dead, and he covered Mallibert’s body with a parachute.

Mallibert was lucky to have survived the crash, but he escaped death a second time minutes later. A fire truck drove over the parachute, its driver unaware that Mallibert was underneath it. Miraculously, the truck's wheels missed Mallibert on both sides. Soon after that, a fireman found Mallibert and discovered that he was still alive. He was taken to a nearby hospital where he remained in critical condition for many days.

This crash renewed calls for the Navy to leave Moffett Field, and several local members of Congress called for a halt to flying from Moffett Field in the days following the crash. There had been a large number of crashes around the air station when fighters and attack aircraft were based there in the 1950s, but P-3 operations had an excellent safety record. This collision was the only crash involving a P-3 near the airfield between the early 1960s, when patrol operations began, and 1994 when the Navy decommissioned Naval Air Station Moffett Field.

With the loss of Galileo, NASA lost a unique research asset in addition to losing several of the scientists who had helped to develop the flying laboratory and its experiments. Many of the programs that were to use Galileo were either delayed for years or were cancelled completely following the crash.

Today, Moffett Field is officially designated Moffett Federal Airfield. The Navy is gone, but the California Air National Guard's 129th Rescue Wing is stationed there and other military and government aircraft use the field occasionally. NASA eventually transferred all of the aircraft that had been operated by Ames Research Center to what is now the Armstrong Flight Research Center at Edwards Air Force Base. There is far less traffic at Moffett Field today than there was in 1973.

The final approaches to runways 32L and 32R still pass over the Sunnyvale Municipal Golf Course. There is no evidence on the course of the tragic mid-air collision that took place more than forty years ago.

This accident apparently occurred because of a simple mistake in air traffic control procedures. The weather was excellent, no mechanical or electronic failures were involved, and the crews aboard each aircraft were well trained and experienced. Sixteen men and two valuable aircraft were lost, but future accidents may have been prevented through enhanced awareness of Moffett Field's particular operations.