



Fatal Scenic Tour Flight Blamed on Poor Pilot Judgment, Inadequate Background Checks

After a Beech 18 with eight passengers crashed into mountainous terrain, investigators found that the pilot had falsified his flying experience. The U.S. National Transportation Safety Board (NTSB) also found that his employer had failed to conduct a substantive background check to verify the pilot's experience and work history.

Editorial Staff Report

The twin-engine Beech E18S was on a scenic air tour flight from Hilo, Hawaii, to Honolulu, Hawaii, when the aircraft collided with Mt. Haleakala on the island of Maui.

The pilot and eight passengers were killed in the April 22, 1992, crash. The aircraft was destroyed by impact forces and a post-crash fire. The accident occurred at 1553 Hawaiian Standard Time, and the wreckage was discovered the following morning slightly above the elevation of 9,600 feet (2,909 meters).

Although the U.S. National Transportation Safety Board

(NTSB) determined that the probable cause of the accident was the "captain's decision to continue visual flight into instrument meteorological conditions (IMC) that obscured rising mountainous terrain," it noted that the crash raised several additional safety issues, including pilot qualifications, pre-employment background checks of prospective pilots and "the overall safety of the air tour industry."

Scenic Air Tours (SAT) flight 22 was conducted under provisions of on-demand air taxi operations contained in Part 135 U.S. Federal Aviation Regulations (FAR).

“Contributing to the accident was the failure of Scenic Air Tours to conduct substantive pre-employment background screening, and the failure of the [U.S.] Federal Aviation Administration (FAA) to require commercial operators to conduct substantive pilot pre-employment screening,” the NTSB said.

After its investigation of the accident, the NTSB concluded that:

The captain had falsified employment application and resume information when he applied for a pilot position at SAT and that company personnel were not aware of these falsifications because a background check of the pilot’s aeronautical experience was not conducted;

- The pilot did not possess the minimum hours of experience stipulated by the company operations manual to qualify as captain either at the time he was hired or at the time of the accident;
- Although SAT flights were required to be conducted under visual flight rules (VFR), the captain continued the flight into IMC that prevailed along the eastern and southern slopes of Mt. Haleakala [a volcano crater];
- The captain either did not see or did not evaluate the significance of an upsloping cloud layer that was produced by an orographic lifting phenomenon at Mt. Haleakala, and did not make visual contact with the rising terrain until seconds before impact because it was obscured by clouds; and,
- The captain mistakenly deviated from his intended route apparently because he did not use his navigation charts to confirm the correct heading ... [and] his navigation error went undetected because he failed to adequately cross-check progress of the flight using navigational aids available to him.

The captain, 26, joined SAT in 1988 “as a van driver,” the NTSB said. The report said that during this time the captain obtained a commercial pilot certificate and an instrument rating. The captain then left the company for a pilot job and was rehired by SAT in August 1991 as pilot-in-command of the Beech 18. According to FAA records, the captain also held an airline transport pilot certificate without type rating issued in January 1991.

“FAA records did not indicate any prior accident/incident history or enforcement actions,” the NTSB said.

“The captain satisfactorily completed all company training and no company disciplinary actions were recorded.”

Nevertheless, the NTSB report said that the captain’s logbook was missing and that there appeared to be significant discrepancies between total flight hours reported and flight hours actually flown.

“A[n] SAT pilot experience form, signed and completed by the captain on July 28, 1991, indicated that his total time was 3,400 hours, of which 3,200 were as pilot-in-command. The form further indicated that his twin-engine experience was 1,450 hours. He reported his instrument flying time as 400 hours, of which 150 hours were accrued under actual flying conditions,” the NTSB said.

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The report added: “To illustrate his relevant pilot experience, the captain provided SAT with an undated resume of his general aeronautical background. The resume showed the following: Total time, 3,200 hours; pilot-in-command, 2,750 hours and multi-engine 1,500 hours. The captain (also) indicated that he had prior experience in the Beech 18 airplane.”

The NTSB report said the pilot’s aeronautical experience was reconstructed using information from previous employers [the captain had listed six on his resume], his FAA airman certification records and his FAA aeromedical certification file.

The investigation determined that at the time he was hired by SAT as a captain in 1991, records “indicated that he had accumulated fewer than 1,600 hours of total time and less than 400 hours of multi-engine experience.”

The report noted that SAT’s minimum pilot experience requirement was 2,500 hours total time and 1,000 hours in multi-engine airplanes.

“Including all of the pilot experience known to the Safety Board, the captain had no more than 2,100 hours of total time, of which 800 hours were in multi-engine airplanes as of the time of the accident,” the NTSB said.

The report added that records indicated that the captain’s total flight time in the Beech 18 was accrued only with SAT and totaled 464.7 hours.

According to the NTSB report, SAT’s director of operations said the decision to hire the captain was based, in part, on a recommendation from the company’s previous owner.

The company's pre-employment check consisted of a telephone call to a cargo and charter operator headquartered in Honolulu, which reported the captain had flown single-engine day and night operations and had departed "in good standing" to take a job with a major air carrier on the U.S. mainland.

The NTSB said that the air carrier's records indicated that the "captain was dismissed during initial ground training for inadequate performance."

"The Safety Board investigation revealed that the captain had been employed by at least nine employers, including two positions with SAT under different owners, since 1988. Five of these employers had dismissed him. Causes for dismissal included misrepresentation of qualifications and experience, failure to report for duty, disciplinary action, poor training performance and work performance that was below standards."

The report said that in 1991 another local Part 135 operator had rejected the captain's application for a pilot position "for failing to disclose information and misrepresentation" concerning previous employment.

"The application included a letter of recommendation submitted on stationery of the captain's most recent employer," the NTSB said. "Safety Board investigators were advised by the former employer that the letter did not come from an official source at the company and that they considered the letter to be fraudulent."

According to the NTSB report, SAT conducted instrument training flight checks by having the pilot either lower his seat or use a view-restricting device for about 10 minutes. "Slow flight, steep turns, stalls and recovery from unusual attitudes with reference to basic instruments were not part of the training," the report said.

The weather briefing the captain received noted marginal VFR conditions; VFR flight over interior sections of the islands was not recommended.

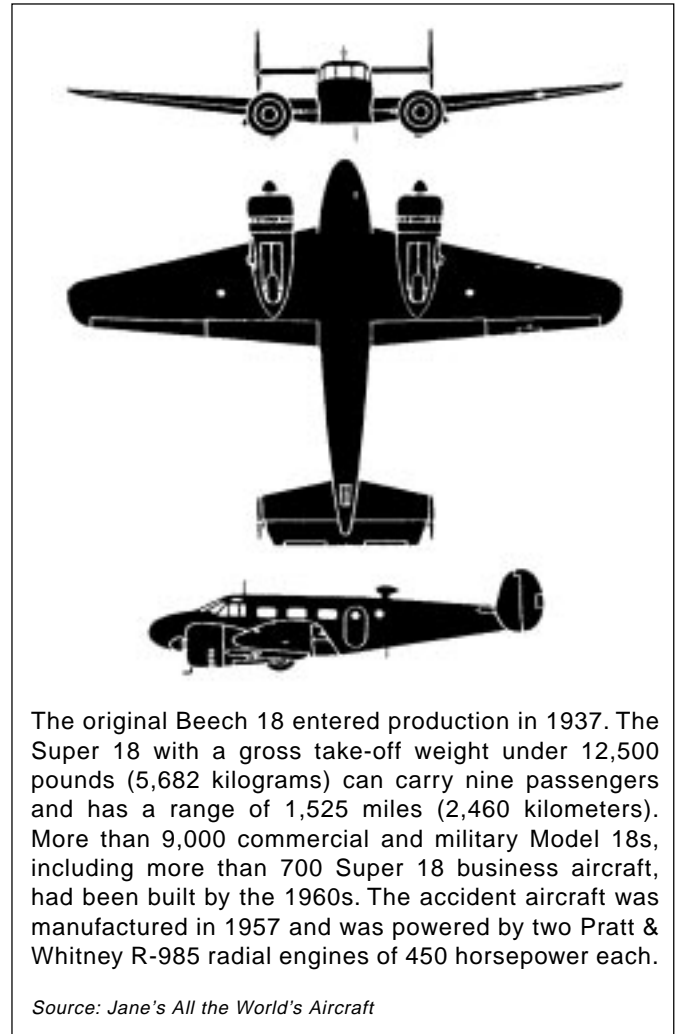
The NTSB report said that pilots knowledgeable about characteristics of weather formation over the islands should have known that IMC conditions affecting the islands were primarily land-based.

"The cloud cover that the captain encountered, and was apparently attempting to climb over as he proceeded in a northwesterly direction ... should have been an indication to him that he was heading toward Maui and Mt. Haleakala," the report said. "Under the existing atmospheric conditions, no other land mass in the area could have generated the orographic lifting of clouds at the altitude in which he encountered them. However, haze and clouds between the airplane and Mt. Haleakala could

have obscured the observation of a distinctive cloud mass over the island."

According to radar tracking information, the aircraft maintained a continuous climb as it approached Maui and crossed the shoreline at an altitude of 8,100 feet (2,454 meters) mean sea level (MSL).

Other pilots in the vicinity at the time of the crash reported that the area surrounding Mt. Haleakala was obscured by clouds, rain showers and haze.



The original Beech 18 entered production in 1937. The Super 18 with a gross take-off weight under 12,500 pounds (5,682 kilograms) can carry nine passengers and has a range of 1,525 miles (2,460 kilometers). More than 9,000 commercial and military Model 18s, including more than 700 Super 18 business aircraft, had been built by the 1960s. The accident aircraft was manufactured in 1957 and was powered by two Pratt & Whitney R-985 radial engines of 450 horsepower each.

Source: *Jane's All the World's Aircraft*

The report noted that Mt. Haleakala is "one of the most prominent landmarks in the Hawaiian Islands" and that SAT pilots "were well aware that they were authorized to conduct operations only in visual meteorological conditions (VMC) and to deviate from designated routes only to the extent necessary to avoid weather."

A medical examination determined that the cause of death for all of the airplane's occupants was multiple traumatic injuries. The wreckage was found in terrain consisting of loose gravel and lava rocks.

“The pilot and a female passenger in the right cockpit seat had been ejected from the airplane and were separated from their respective cockpit seats,” the NTSB said. “A male passenger was also ejected forward from the airplane and was found strapped in a passenger seat. The remaining six passengers and passenger seats were found in the forward portion of the cabin wreckage.”

The NTSB report said there was evidence that the pilot attempted evasive maneuvers close to the ground to avoid striking the terrain.

“The wreckage condition indicated a trajectory with little forward motion and high vertical impact forces,” the NTSB said. “The wreckage pattern is consistent with ground contact in a stalled condition.”

The post-crash examination devoted considerable attention to the pilot’s apparent unintentional deviation from his planned flight route, about 23 degrees between planned and actual flight track. The NTSB said the disparity “should have been apparent to the captain” if he were following standard operational procedures.

“Reasonable explanations for his failure to recognize the difference include relying on his memory rather than using the VFR sectional chart or another aid to verify the proper flight headings; failing to compare the inherent precession errors of the gyroscopic direction indicator with the magnetic compass ... and reduced visibility from the usual weather pattern that normally allowed the captain to fly between the islands solely by use of outside references.”

The NTSB said that three local VFR sectional charts were found folded in the captain’s flight bag, which was recovered from the wreckage. A prepared memory-aid folder that included radio navigation frequencies, frequently used headings and other navigation information was found at his home.

The report described the Safety Board’s explanation for the accident: “... the most plausible explanation for the unintentional routing is a failure of the captain to turn the [navigation receiver’s] omni bearing selector (OBS) to the desired course radial while tracking outbound on the UPP VOR [Upolu Point very high frequency omni-directional radio]. Radar data indicate that when the airplane was passing the UPP VOR, it turned from a westerly heading to a northwesterly heading toward Maui. The accident site is on the 310 [-degree] radial of the UPP VOR at the 39 DME [nautical miles from UPP VOR/distance-measuring equipment]. The radial from the UPP

VOR to R-3104 [Kahoolawe], the captain’s intended over-flight point, is approximately 287 [degrees], a difference of 23 degrees. The Safety Board tried to determine whether any similarities existed between accident flight and the captain’s previous flights. It was discovered that the bearing of the accident site from the UPP VOR (310 degrees) was identical to the radial that SAT pilots routinely follow when they are flying outbound from the Hilo Airport. The 310-degree radial from the ITO VOR is customarily used for guidance by company pilots on flights departing Hilo for a popular scenic attraction on the north shore of the island. The same 310-degree radial also provides the initial flight track for the northern route to HNL [Honolulu] via Hana. The captain was well acquainted with the routing to Hana and had used it four times in the 5-day period prior to the accident. It is quite possible that after the captain tuned in the frequency for the UPP VOR, he did not follow through with the course set procedure and use the OBS knob to select the appropriate 287-degree radial needed to navigate across the channel from the UPP VOR to R-3104.”

The accident, the NTSB said, also underscored the need for a broader reassessment of safety issues in the national air tour industry, which serves more than 2 million passengers a year. The NTSB recommended that the FAA revise FAR to “create a specific classification for, and operating rules governing, commercial air tour operations.”

The report said that the FAA “should review the nature and structure of the air tour industry and assess the risks

posed by air tour operators based on geographical, environmental, operational, air traffic and passenger enplanement considerations.”

The NTSB said current regulations do not address many of the unique features and needs of air tour operators. The report said the conclusions were based on a study of 12 fatal fixed-wing accidents involving air tour operators during a 10-year period ending in 1992.

The report said many operators conduct relatively short flights and thus accrue an “abnormal ratio of flight cycles to flight hours, necessitating special considerations in their aircraft maintenance programs.”

Weather conditions unique to the area of operation should also be considered when evaluating pilot and aircraft instrument flight capabilities, the NTSB said.

“Further consideration should be given to traffic flow requirements and radar coverage in areas where high

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density air tour operations pose an increased danger of midair collisions," the NTSB said.

Eight of the accidents occurred in or near Grand Canyon National Park in Arizona, the NTSB said. Four fatal air tour accidents (and one nonfatal ditching) occurred in Hawaii. There were 96 fatalities in the 12 accidents and six were controlled -flight-into -terrain (CFIT) accidents.

The nonfatal ditching in Hawaii in 1991 also involved an SAT Beech 18, the NTSB said. In June 1989, an SAT Beech 18 crashed in a Hawaiian canyon 600 feet (182 meters) below the canyon rim, killing 11 persons aboard.

"The Safety Board believes the FAA can enhance the level of safety of the [air tour] operations either by expanding the existing regulatory framework (Part 135), or by creating a new Part for commercial air tour flights,"

the NTSB said.

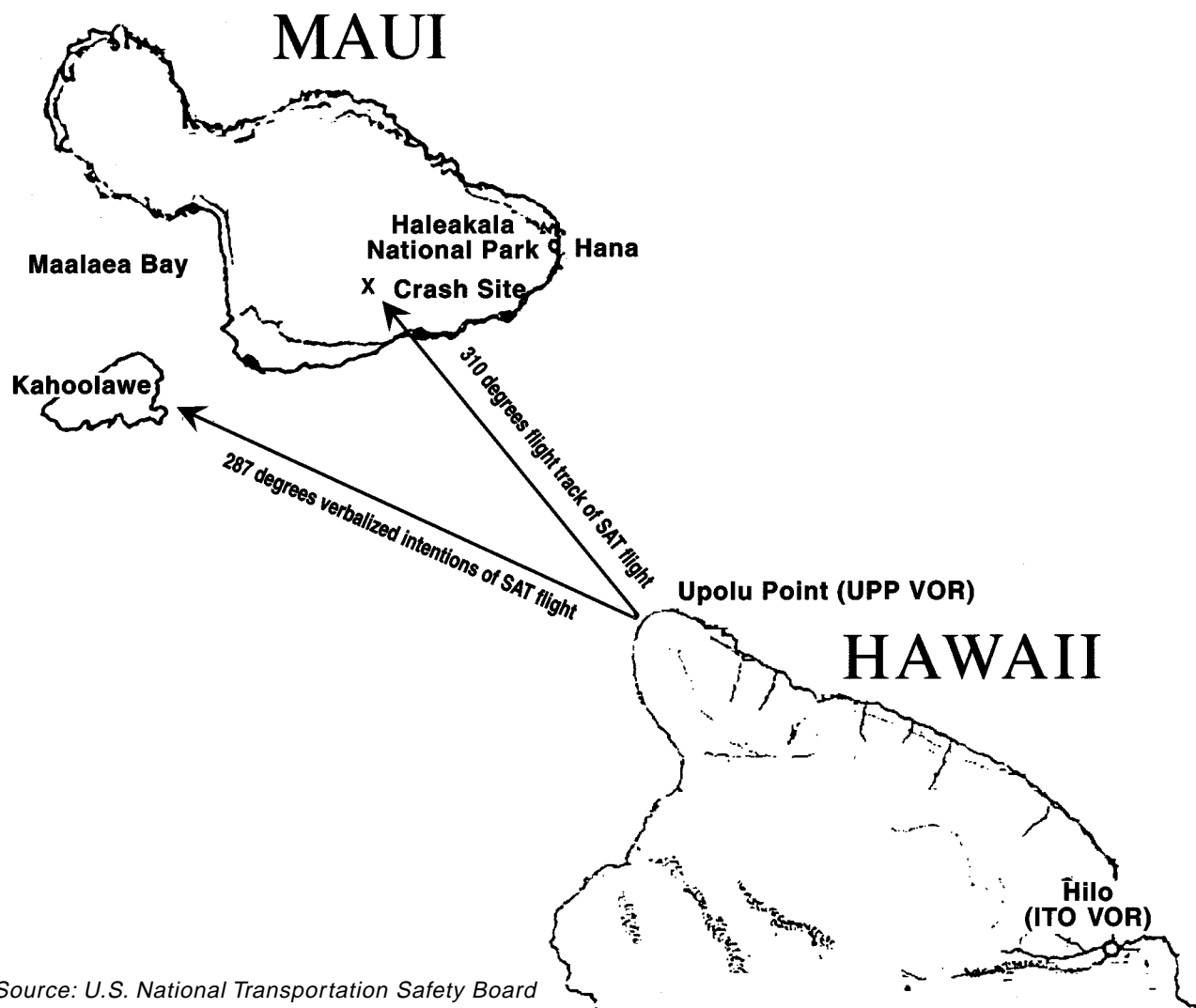
The report said these guidelines should be based on the complexity of flight operations, aircraft flown, flight frequency, number of passengers carried and air traffic densities.

Following several Grand Canyon accidents, the FAA prescribed specific flight rules [designated routes and altitudes and Part 135 certification] for operations in the vicinity of Grand Canyon National Park.

In addition, the report recommended that the FAA:

- Identify airspace that warrants special protection because of the presence of commercial air tour operations and create special rules to reduce the risk of midair collisions and other accidents;

Accident Flight Track of Scenic Air Tours Flight 22



- Ensure that regulatory resources are in place to monitor commercial air tour operations; and,
- Require commercial operators to conduct substantive background checks of pilot applicants.

In a dissenting statement, NTSB member John K. Lauber, Ph.D., said that by electing to “embrace a ‘pilot error’ probable cause ... the majority [of the NTSB members] has, in my opinion, foregone an important opportunity to leverage meaningful changes that would be more helpful in the prevention of future accidents like this one.”

Lauber added: “Because this pilot’s performance was so egregious, I venture to say that few pilots will see any apparent relationship between what we believe this pilot did and his or her own piloting skills. Such denial is an especially potent force among those pilots whose character and judgment flaws would lead them to take risks similar to what this pilot did; those who need to hear this message the most are the least likely to gain any meaningful insight into their own behavior from the probable cause adopted by the majority.”

Lauber said the NTSB probable cause determination should have read that the “probable causes of this accident were (1) the failure of Scenic Air Tours to conduct a substantive pilot pre-employment background check, which resulted in the placement of an inadequately qualified pilot in command of the accident flight; and (2) the pilot’s improper navigation and his decision to continue VFR flight into IMC conditions.” He said a contributing cause was the FAA’s failure to require commercial operators to conduct such background checks.

“It is certainly true, as the majority holds, that this pilot’s actions were directly causal to this accident,” Lauber said. “It is equally true, I believe, that the actions, or inaction, of Scenic Air Tours just as surely cast the dice that ultimately determined the tragic fate of these passengers.

“I also agree with the majority that no single management action, no screening program, no training program can absolutely guarantee passengers freedom from risk. In the real world, one can realistically only alter probabilities; failure to take reasonable action to positively manage these risks also causes accidents.

“Since every pilot hired by an operator must ultimately pass through a sieve whose mesh size is set by management policy, pilot screening and training programs effect great leverage on system safety. In my opinion, this Board [the NTSB] ought to take every opportunity to bring its considerable moral authority to bear on the operators who are responsible for the conduct of such programs. I believe we have missed such an opportunity.” ♦

References

U.S. National Transportation Safety Board. *Aircraft Accident Report: Tomy International, Inc. d/b/a Scenic Air Tours Flight 22, Beech Model E18S, N342E In-flight Collision with Terrain Mount Haleakala, Maui, Hawaii, April 22, 1992*, Report No. NTSB/AAE-93/01. February 1993.

Copies of the NTSB report may be obtained from the:
National Technical Information Service
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