

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: August 4, 1948

Released: August 4, 1948

EAGLE AIR FREIGHT, INC.,—MT. HAMILTON, CALIFORNIA,—MARCH 8, 1948**The Accident**

At approximately 1800.¹ March 8, 1948, aircraft NC-64722, a DC-3-C, operated by Eagle Air Freight, Inc., a non-scheduled carrier, crashed on the west slope of Mt. Hamilton, near San Jose, California. The crew of two, its only occupants, were killed, and the aircraft was destroyed.

History of the Flight

The flight departed from Seattle, Washington, at approximately 1300, March 8, 1948, with a crew consisting of George S. Griebel, pilot, and William F. Grund, co-pilot. It carried 800 gallons of fuel, but no passengers or cargo, weighing at the time of take-off 21,963 pounds. At 1615, the flight reported over Red Bluff, California, at 12,000 feet, and requested clearance to descend to and cruise at 10,000 feet. Oakland Airway Traffic Control granted the request, and also cleared the flight to the Moffett radio range station, 25 miles southeast of San Francisco Municipal Airport, San Francisco, California. At 1715, the flight advised San Francisco Approach Control that it was holding northwest of the Moffett radio range station at 10,000 feet. In reply, San Francisco Approach Control directed the flight to hold between the Moffett radio range station and a point 2 minutes northwest of it. At the same time the flight was advised to expect clearance to the San Francisco Municipal Airport at 1745.

Between 1717 and 1734 the flight, while flying its holding pattern, received clearance and descended from 10,000 to 6,000 feet. At 1741, it was cleared to make a "straight in" approach to the San Francisco Airport. It was directed to report when it crossed the Moffett radio range station and 4,000 feet, and to report again when it had descended below the overcast. A minute

later, at 1742, the flight reported leaving the Moffett radio range station and 4,000 feet. Though the San Francisco Tower called repeatedly, this was the last communication received from the flight.

Between 1755 and 1805 a rancher in the vicinity of Mt. Hamilton heard a noise he thought to be either thunder or blasting. About 1945, after driving to another part of his ranch, he observed fire in the hills and realized then that the noise he had thought to be thunder was that of an aircraft crashing. It was midnight before a searching party reached the wreckage, which was approximately 20 miles east-southeast (on a bearing of 110 degrees) from the Moffett radio range station, and at an elevation of 1,800 feet.

Investigation

The position of the wreckage, and the marks left by the aircraft on the trees and ground, indicated that it had been flying on a magnetic course of about 275 degrees at the time it struck the ground in a canyon on the west side of Mt. Hamilton. After passing through tree tops, the right wing tip of the aircraft struck the hillside, sheared off, and was partly buried. Skidding up and across the hillside within the canyon for 30 feet the aircraft left gouges in the earth, first with the right landing gear wheel and engine and then with the left landing gear wheel and engine. Twenty feet beyond these marks the tail skidded around clockwise 90 degrees, and the aircraft came to a stop.

Both propellers were broken from their propeller shafts, and both engines were torn free of the aircraft, rolling 20 feet uphill from the main body of the wreckage. Fire, which immediately followed impact, completely destroyed the cockpit and the center wing section. The left wing, broken in two places, folded into the side of the fuselage. The landing gear had been extended

¹All times noted in this report are Pacific Standard and based on the 24-hour clock.

before the accident occurred. The right wheel had broken off, but the left wheel remained attached to its mounting.

Though both propellers and their attached domes were burned, sufficient portions remained to show that neither propeller had been feathered. The blades were bent in such a way as to indicate that at least enough power was being applied to sustain flight at the time of impact. The altimeter was badly burned, and the pressure-setting was unreadable, but the pointers indicated an altitude of 1,500 feet. The dial of a partially melted radio range receiver showed a setting of 225 kcs., the approximate frequency of the San Francisco radio range. All other cockpit instruments and controls were melted or burned. All gasoline tanks were destroyed by fire. Carburetor heat controls were found in the "on" position for both engines.

In the investigation of the aircraft and its components, no indication was found of fire, or of mechanical malfunctioning, or of structural defect, previous to the time of impact. The aircraft's records indicated that all required maintenance had been performed, and that the aircraft, so far as the records were concerned, was in an airworthy condition when it departed from Seattle.

An air carrier aircraft which had made an instrument approach to San Francisco about 20 minutes before that of the Eagle Air Freight flight found all radio facilities in the area to be normal. Following the accident a check was made of the San Francisco and Oakland radio ranges. A check also was made of the Newark and Evergreen radio beacons and the Moffett radio range, which are within 40 miles of San Francisco, and all of these radio facilities were operating normally.

On the morning of March 8, 1948, a low pressure area was centered about 150 miles west of the northern Oregon coast and moving in a southeasterly direction. As the day progressed stratiform clouds with steady rain or drizzle developed ahead of the front. In Seattle the United States Weather Bureau informed Captain Griebel of this weak front, of the probability of his encountering instrument weather from Seattle to Red Bluff, and that he would encounter broken layers of alto-cumulus and

strato-cumulus clouds from Red Bluff to San Francisco. Captain Griebel was told that there would be moderate turbulence with icing within the clouds over the southwest region of Oregon at altitudes of 10,000 to 11,000 feet. He was also told that over Washington and Oregon at 10,000 feet winds would be westerly at 30 to 35 miles per hour, and that over northern California at 10,000 feet winds would be northwesterly at 25 to 30 miles per hour.

Official reports of the various weather observation stations along the route were in substantial conformity with the information given to Captain Griebel in Seattle, except that winds at 10,000 feet over the San Francisco area were 40 to 45 miles per hour instead of 25 to 30 miles per hour as forecasted. However, the reported velocity of the wind at lower altitudes was much less. Between 2,000 and 5,000 feet in the San Francisco area the wind was from 300 to 320 degrees at 15 to 20 miles per hour. Captain Griebel was advised that upon the flight's arrival in San Francisco, there would be a ceiling of 1,000 feet and visibility of 6 miles. Actually the ceiling there, 30 minutes before the flight was cleared into San Francisco Municipal Airport, was reported to be indefinite, 700 feet, and the visibility to be 3 miles with light rain.

According to witnesses in the vicinity of Mt. Hamilton at the time of the accident, weather conditions there consisted of low clouds which obscured the mountain tops above 1,500 feet, and although it had rained earlier in the afternoon, it was not raining at the time of the accident. Sunset for March 8, 1948, was at 1808; accordingly, there was daylight at 1800, the estimated time of the crash.

Between 1740 and 1745 a witness in Belmont, California, observed a DC-3 aircraft flying at an altitude he estimated to be 500 feet. The aircraft reached the edge of San Francisco Bay and then turned north. He did not notice the aircraft's markings or otherwise identify it. Three or 4 minutes later the witness heard what he took to be the same plane passing over again.

At approximately 1755, a private pilot in San Jose observed a DC-3 aircraft fly over the city. It was flying just under an estimated 2,000 foot overcast, and was headed in the direction of

the mountains where the accident occurred. The witness could not read the markings on the aircraft or otherwise identify it.

NC-64722 was equipped with a Collins aircraft transmitter, an Army command transmitter, an automatic radio direction-finder receiver, a manual radio direction-finder receiver, and two Army command radio receivers.

Captain Griebel, age 36, held an airline transport pilot rating, and had been employed by the company as a captain since December 15, 1946. Previously he had flown as a co-pilot for a scheduled air carrier, and had graduated from its school for captains. His flying hours at the time of the accident totaled 5,552, of which 3,926 were in DC-3 type aircraft. The date of his last CAA physical examination was December 10, 1947. First Officer Grund, age 28, held an airman certificate with commercial pilot and instrument ratings. After experience as an United States Army Air Forces pilot and as co-pilot with a scheduled air carrier, he had been employed by Eagle Air Freight on December 15, 1947. His flying hours totaled 3,542, of which approximately 1,630 were in DC-3 type aircraft. The date of his last CAA physical examination was August 22, 1947.

During the 30 days previous to the accident, the pilot had flown a total of 89 1/2 hours, and the co-pilot 82 1/2 hours. On the day before the accident, both pilots had flown 8 hours and 10 minutes, and had 12 hours of rest before the flight which ended with the accident.

Captain Griebel had made about 6 instrument approaches to San Francisco Municipal Airport before the accident, and was considered by the company's chief pilot to be entirely familiar with the instrument approach procedure and techniques there.

Discussion

The last communication from the flight at 1742 was a report that it was leaving Moffett radio range station and 4,000 feet. If the flight had been over the Moffett radio range station at that time, and had then proceeded inbound in accordance with its clearance, the aircraft, had it crashed under such circumstances, would have been found between the Moffett radio range station

and the San Francisco Municipal Airport. However, the actual location of the wreckage was in the opposite direction, 20 miles east-southeast of the Moffett radio range station. This cannot be explained by a possible missed approach, since the missed approach procedure for San Francisco required the flight to proceed northwest from San Francisco Municipal Airport and not southeast. Moreover, no message from the flight that it had missed its approach was received.

Likewise, the possibility of mechanical, structural, or radio failure does not explain the location of the wreckage. As stated above, all evidence available indicated that the aircraft was normally operative up to the time of the impact, but had there been mechanical difficulty during the flight's approach to San Francisco, the pilot, in all probability, would have continued on course toward San Francisco. In the event of a total radio failure, the flight might have flown toward the coast, so as to descend over water. Certainly, it would not be reasonable to fly in the reverse direction toward the mountains.

It follows that the flight, after being cleared for a straight-in approach to San Francisco Municipal Airport, departed from its clearance and approved instrument procedure. After acknowledging the clearance the flight must have flown away from rather than toward San Francisco, since as stated above, the accident occurred 20 miles east-southeast of the Moffett radio range station. A break may have been observed in the overcast, and the flight may have descended through it, attempting to fly by visual reference to the ground.

It is unlikely that the DC-3 observed over Belmont 10 to 15 minutes before the accident was that of the Eagle Air Freight flight. The ceiling over San Francisco was lifting, and had the flight been below the overcast in the Bay area, it most certainly would have proceeded to San Francisco. The DC-3 observed over San Jose about 5 minutes before the approximate time of the accident may have been that of this flight, since it was heading toward the mountains and the accident area. During the period between the last report, "leaving Moffett and 4,000 feet," and the time of the accident, about 18 minutes later, the flight may have flown intermittently

"on instruments" and "contact." Since the flight departed from its clearance and from standard instrument procedure, its flight path from Moffett to the scene of the accident cannot be determined.

Findings

Upon the basis of all available evidence, the Board finds that:

1. The carrier, aircraft, and crew were properly certificated.
2. Aircraft records were complete and showed all the required maintenance to have been performed.
3. There was no evidence of mechanical malfunctioning or of any structural defect prior to the time of impact.
4. The aircraft carried a crew of 2,800 gallons fuel, and no passengers or cargo, the total take-off weight being 21,963 pounds.
5. At the time the flight was cleared for a straight-in approach to San Francisco Municipal Airport, the ceiling at San Francisco Municipal Airport was 700 feet and the visibility 3 miles. Low clouds obscured the area in which the accident occurred.

6. There was no evidence of the malfunctioning of either airborne or ground radio facilities.

7. In the flight's last known transmission at 1742, it reported leaving the Moffett radio range station and 4,000 feet.

8. The aircraft crashed approximately 18 minutes after its last radio report, at a point 20 miles east-southeast of the Moffett radio range station, and at an elevation of 1,800 feet.

Probable Cause

The Board determines that the probable cause of this accident was the flight's deviation from its clearance and from approved instrument procedure.

BY THE CIVIL AERONAUTICS BOARD:

/s/ JOSEPH J. O'CONNELL, JR.
 /s/ JOSH LEE
 /s/ HAROLD A. JONES
 /s/ RUSSELL B. ADAMS

Ryan, Vice Chairman, did not participate.

Supplemental Data

Investigation and Hearing

The Civil Aeronautics Board received notification of the accident the evening of March 8, 1948. An investigation was begun immediately, in accordance with the provisions of Section 702(a)(2) of the Civil Aeronautics Act of 1938, as amended. A public hearing was held March 24, 1948, in San Jose, California.

Air Carrier

Eagle Air Freight maintains general offices in Burbank, California, the state of its incorporation. At the time of the accident, it was operating under a letter of registration from the Civil Aeronautics Board, and a non-scheduled air carrier operating certificate from the Civil Aeronautics Administration.

Flight Personnel

Captain George S. Griebel, age 36, held an airline transport pilot rating, and at the time of the accident had logged a total of 5,552 flying hours, of which 3,926 were in DC-3 type aircraft.

His last CAA physical examination was on December 10, 1947. First Officer William F. Grund, age 28, held an airman certificate with commercial pilot and instrument ratings. At the time of the accident he had logged a total of 3,542 flying hours, of which approximately 1,630 were in DC-3 type aircraft. His last CAA physical examination was on August 22, 1947.

The Aircraft

The Douglas DC-3-C, NC-64722, was owned by Dianna C. Syrus of Santa Paula, California, and leased by Eagle Air Freight, Inc. The aircraft had been flown a total of 3,534 hours since its manufacture. It was equipped with two Pratt and Whitney engines on which Hamilton Standard propellers were installed. The left engine had been operated a total of 857 hours, of which 336 hours were since overhaul. The right engine had been operated a total of 690 hours, of which 336 hours were since overhaul. At the time of departure the aircraft carried no cargo or passengers.