

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: June 7, 1948

Released: June 8, 1948

BRUNING AVIATION, INCORPORATED—COLUMBUS, OHIO—FEBRUARY 25, 1948

The Accident

At approximately 0600,¹ February 25, 1948, a DC-3 aircraft, NC-36498, operated as a cargo flight by Bruning Aviation, Inc., a non-scheduled carrier,² crashed and burned near Columbus, Ohio. The pilot was killed, the co-pilot seriously injured, and the aircraft was destroyed.

History of the Flight

The flight departed from Teterboro, N. J., for Columbus, Ohio, at approximately 2330, February 24, 1948, with a crew consisting of Peter J. De Cicco, pilot, and Jack R. Cole, co-pilot. It was loaded with 349 gallons of fuel and 7,818 pounds of cargo. Instrument flight conditions were encountered in the vicinity of Newark, N. J., along with a light freezing rain which the flight climbed out of without difficulty. Moderate turbulence and strong head winds were encountered, and the crew decided to land at Pittsburgh, Pa., their alternate, for additional fuel.

At Pittsburgh, Co-pilot Cole prepared the flight plan to Columbus, and consulted the Flight Advisory Weather Service. The 0337 United States Weather Bureau observations, then available at Pittsburgh, reported a ceiling of 1,100 feet and visibility of 5 miles at Columbus; a ceiling of 200 feet and visibility of 1/2 mile, with light drizzle and fog at Dayton, Ohio; and a ceiling of 200 feet and visibility of one mile, with light drizzle and fog at Cincinnati, Ohio. The United States Weather Bureau forecasts issued for the area at Chicago, Illinois, for the period from 2330, February 24, to 0730, February 25, and special terminal

forecasts issued at 0235, from Dayton, were also available. According to these forecasts, by 0400 the ceiling at Dayton was expected to be 300 feet and at Cincinnati 200 feet. The ceiling at Columbus by 0130 was expected to be 2,000 feet and by 0530 to be 1,500 feet. However, Mr. Cole was advised by the Flight Advisory Weather Service forecaster at Pittsburgh that low stratus would be likely to move over Columbus, bringing the ceiling down to 300 feet and the visibility to about 2 miles by 0500, February 25.

After the aircraft was serviced with an additional 145 gallons of fuel, the flight departed at 0434 from Pittsburgh for Columbus, on an instrument flight plan, Pittsburgh being the alternate. Co-pilot Cole occupied the left seat and flew the aircraft until the instrument approach to Columbus was started. Weather reports were transmitted during the course of the flight, 15 and 45 minutes after each hour, which showed a decline in ceilings at Columbus. A cruising altitude of 2,600 feet was maintained, which was below the icing level. The turbulence was light and instrument conditions were not encountered until the flight reached the vicinity of Zanesville, Ohio, 45 miles from Columbus.

At 0524, the flight was cleared by Air Traffic Control to the Hilliard fan marker, located 9.8 miles west of the Columbus radio range station. At 0537, the flight reported its position to Zanesville radio as 20 minutes east of Columbus, and requested information concerning the minimums for ceiling and visibility for landing at Columbus. Columbus Tower advised that the minimums were: ceiling 400 feet and visibility one mile. Actually, the minimum ceiling for the Port Columbus Airport as set forth in the CAA Flight Information Manual, and controlling in this case, was 500 feet.

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

²Not a scheduled carrier operating under a certificate of public convenience and necessity issued by the Civil Aeronautics Board

The last communication from the flight was received at 0550, when it reported being at an altitude of 2,600 feet over the Newark fan marker, a point 23 miles east of the airport. At this time Columbus Tower cleared the flight for a "straight-in" instrument approach, and advised them that according to the 0530 weather observation the ceiling was indefinite 400 feet, visibility 2 miles, and that the altimeter setting was 30.28. Columbus Tower also stated that another weather observation was then being made which might report a lower ceiling; and, therefore, suggested that the flight expedite its approach. This prospective weather observation was transmitted at 0601 and reported the ceiling to be 300 feet, visibility 2 miles, with light rain, fog, and smoke. Columbus Tower transmitted this weather information repeatedly, but no acknowledgment was received.

Captain De Cicco took over the controls of the aircraft shortly after the flight had passed the Newark fan marker, and started an instrument approach to the Port Columbus Airport. Altitude was reduced to 1,600 feet which was the minimum for that part of the instrument approach to Columbus. However, Captain De Cicco continued his descent below 1,600 feet despite the objections of Mr. Cole. Mr. Cole stated that he immediately engaged himself in a search of the cockpit for an instrument approach chart for Columbus, presumably to show Captain De Cicco that an altitude of 1,600 feet was required until over the Summit Hill fan marker. The descent was continued, and just as the aircraft emerged below the overcast Mr. Cole looked up to see the trees into which the aircraft flew. The first tree struck extended approximately 90 feet above the terrain, the elevation of which was 1,055 feet. The aircraft continued in a straight line, striking a second tree 160 feet away from the first. At this point the right horizontal stabilizer tip and the right elevator were sheared from the empennage. A third tree was struck, 265 feet from the first point of contact, and miscellaneous fuselage parts and the right wing were torn from the aircraft. The airplane then made contact with the ground at which time both propellers were broken from the engines. The main

body of the wreckage came to rest and burned 1,150 feet from the first point of impact. The pilot was killed, but the co-pilot, although seriously injured, has substantially recovered.

Investigation

Fire following impact consumed most of the wreckage, including the various controls and instruments inside the cockpit. However, there was no indication of fire prior to impact, nor was there any evidence of structural defects or mechanical malfunctioning which might have contributed to the cause of the accident. Maintenance records for the aircraft were examined, and showed that the aircraft was in an airworthy condition at the time of its departure from Teterboro. In addition, Mr. Cole testified that the airplane and its component parts operated normally throughout the trip.

The maintenance facilities of Bruning Aviation, Inc., at Fort Wayne, Indiana, were examined and found to be adequate. Hangar space, work shop, stock rooms, office with maintenance records, spare parts, supplies, tools, and equipment, all were satisfactory. The mechanics were properly certificated and were allowed sufficient time to efficiently perform their work. The Douglas DC-3 Maintenance and Overhaul Manual was available, along with necessary CAA publications, specifications, and directives. The company operation and maintenance manual was found to be in order.

The synoptic weather map for the evening of February 24 showed a low-pressure area extending southwestward from Lake Superior through Wisconsin, Iowa, Missouri, southeastern Kansas, Oklahoma, and into Texas. Associated with this low-pressure area was a cold front which was moving eastward toward a high-pressure area which existed along the Atlantic Coast. Ahead of the cold front a rather narrow band of light rain, drizzle, and low ceilings prevailed. As the night advanced, the band of precipitation and low ceilings widened ahead of the front, which continued to move eastward. Before the flight departed from Teterboro, United States Weather Bureau forecasts for the period between 2330, February 24, and 0730, February 25, indicated relatively good weather conditions for the flight to Columbus. It was not anticipated that the precipitation

belt ahead of the front would widen as much as it did. For this reason, although lower ceilings were expected throughout Pennsylvania and, to a degree, in Ohio, the Columbus area was forecasted not to go below 1,500 feet. However, the co-pilot was advised at Pittsburgh that the ceiling at Columbus was likely to go below the minimum for landing by the time the flight arrived there.

The aircraft was properly loaded, both with respect to center of gravity and to the maximum allowable gross weight.

The authorized instrument approach procedure to Columbus when proceeding on a "straight-in" approach from the east requires a minimum approach altitude of 2,600 feet until over the Newark fan marker, 23 miles east of the airport. Altitude may then be reduced to 1,600 feet, the minimum approach altitude until over the Summit Hill fan marker, which is 3 miles east of the airport. The terrain over which aircraft fly using this approach rises to elevations in excess of 1,000 feet. The Port Columbus Airport has an elevation of 817 feet. Six miles east of the airport, where the accident occurred, the ground elevation is 1,055 feet, and there are trees reaching to a height of 100 feet. This rise of the terrain to the east of Port Columbus Airport is gradual and not readily discernible from the air.

According to an agreement between the company and its pilots, each pilot was to supply his own kit containing the published aids to navigation. Captain De Cicco's kit was not recovered from the burned wreckage, and Mr. Cole stated that he was not acquainted with its contents, and accordingly did not know what radio range charts or other data Captain De Cicco consulted prior to initiating his approach to Columbus.

Captain De Cicco, age 26, held an airman certificate with a commercial and instrument rating. At the time of the accident he had approximately 2,150 flying hours. His last CAA physical examination was on July 7, 1947. Captain De Cicco flew with the United States Army Air Forces, and then as co-pilot with a commercial carrier. After being hired by Bruning Aviation, Inc., he flew as co-pilot over several of the Bruning routes. Mr. De Cicco was given an instrument flight check by John Bruning, check pilot for Bruning Aviation, and

then appointed as captain for the company. Just one week before the accident he had passed a company instrument check for a straight-in approach to Port Columbus Airport. First Officer Cole, age 26, held an airline transport pilot rating. At the time of the accident Mr. Cole had a total of 2,400 flying hours, approximately 500 of which were in DC-3 type aircraft. His last CAA physical examination was given on September 27, 1947. He also was a veteran of the United States Army Air Forces.

Discussion

All evidence is to the effect that the aircraft and all of its components operated satisfactorily during the entire flight, and that the operation of radio ranges and other radio aids to navigation were normal. Therefore, it appears that the aircraft crashed 6 miles east of Columbus because the pilot reduced altitude until the aircraft struck the ground. This conclusion is supported by Co-pilot Cole's testimony, which was to the effect that he remonstrated with the captain when he failed to level-off at the minimum approach altitude of 1,600 feet between the Newark and Summit Hill fan markers. It is to be doubted that Captain De Cicco realized that a 400-foot ceiling at Port Columbus Airport would mean only a 200-foot ceiling or less at intervening points of higher elevation along the approach route. It is apparent that there was a lack of cooperation and teamwork during the instrument approach. While Captain De Cicco, seated in the right seat, was making the approach, Co-pilot Cole was occupied in a search for a Columbus instrument approach chart, instead of maintaining a lookout for the ground.

Captain De Cicco's failure to comply with the approved instrument approach procedure to Port Columbus Airport and his inquiry as to the landing minimums indicated that he had no clear understanding of the approved instrument approach procedure. Yet, just one week before the accident he had passed a company instrument check flight into Port Columbus Airport. In any event the crew should have had before them a current instrument approach chart for Port Columbus. Only by such ready reference could they be confident of

executing a safe and precise instrument approach.

Findings

On the basis of all available evidence, the Board finds that.

1. Bruning Aviation, Inc., was an air cargo carrier operating under a letter of registration issued by the Civil Aeronautics Board. Both aircraft and crew were properly certificated.

2. Maintenance records indicated that the aircraft was in an airworthy condition during the entire time of the flight, and no evidence of any mechanical malfunctioning or structural failures was found.

3. The aircraft was properly loaded, both with respect to center of gravity and to the maximum allowable gross weight.

4. At the scene of the crash, 6 miles east of Port Columbus Airport, the ground elevation is 1,055 feet, and at the time of the accident the ceiling was reported over the Port Columbus Airport to be 300 feet and visibility one mile.

5. The radio range and other radio aids to navigation over the route flown operated normally.

6. The weather encountered by the flight prior to the accident was not such as to damage the aircraft, or render it less airworthy in any respect.

7. The co-pilot was advised at Pittsburgh of the synoptic weather situation

along its prospective route and was warned of the probability of the weather at the flight's destination becoming marginal or below minimums. Weather broadcasts available to the flight en route reported lessening ceiling and visibility at Columbus. Along with its clearance for an instrument approach by the Columbus Tower, the flight was informed that a ceiling of 400 feet existed and was expected to lower.

8. The pilot did not follow the standard instrument approach procedure to the Columbus Airport but reduced his altitude below the minimum allowable of 1,600 feet between the Newark and Summit Hill fan markers, located 23 and 5 miles east of Port Columbus Airport respectively; and the aircraft struck the top of trees at an altitude of approximately 1,140 feet.

Probable Cause

The Board determines that the probable cause of this accident was the continuation of an instrument approach below an altitude sufficient to clear the terrain en route.

BY THE CIVIL AERONAUTICS BOARD.

/s/ JOSEPH J. O'CONNELL, JR.

/s/ OSWALD RYAN

/s/ HAROLD A. JONES

Lee and Adams, Members, did not participate.

Supplemental Data

Investigation and Hearing

The Third Regional Office of the Civil Aeronautics Board received notification of the accident from the Civil Aeronautics Administration Communications station. It began an investigation 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 in Columbus, Ohio, March 16, 1948.

Air Carrier

Bruning Aviation, Inc. was chartered in the State of Massachusetts, with executive offices in Springfield, Mass. At the time of the accident Bruning Aviation was operating under an air carrier letter of registration issued by the Civil Aeronautics Board, and a non-scheduled air carrier operating certificate issued by the Civil Aeronautics Administration.

Flight Personnel

Captain De Cicco, age 26, held an airman certificate with a commercial and

instrument rating. He had flown a total of approximately 2150 hours at the time of the accident. His last CAA physical examination was on July 7, 1947. First Officer Cole, age 26, held an airline transport pilot rating. At the time of the accident he had flown a total of 2400 hours, approximately 500 of which were in DC-3 type aircraft. His last CAA physical examination was given on September 27, 1947.

The Aircraft

The Douglas DC-3-C, NC-33498, had been operated a total of 3,300 hours since the date of manufacture, November 12, 1942. It was equipped with two Pratt & Whitney R-1830-92 engines, on which Hamilton Standard Hydromatic propellers were installed. The left engine had been operated a total of 1,124 hours, of which 331 had been accumulated since its last overhaul. The right engine had been operated a total of 981 hours, of which 331 had been accumulated since its last overhaul.