

Adopted: December 2, 1941

File No. 111-41

REPORT OF THE CIVIL AERONAUTICS BOARD
of the
Investigation of an Accident Involving Aircraft in
Scheduled Air Carrier Operation

Floyd Stevenson, Jr., a passenger on a scheduled air carrier, received minor injuries in an accident which occurred at Birmingham, Alabama, on January 4, 1941, about 10:00 a.m. The aircraft, a Lockheed Electra, Model 10-B, NC 14960, operated by Delta Air Corporation, was damaged extensively. No injuries were sustained by the two members of the crew or by the other two passengers. In command of the flight was Captain Edward C. Davis who held an airline transport certificate with 3S and 4M Land ratings and who had accumulated approximately 5,647 hours. Robert L. McKee, who held a commercial certificate with 4M Land and Instrument ratings and who had flown approximately 2,600 hours, was first officer.

Delta's Trip 15, on regular schedule from Atlanta, Georgia, to Birmingham, Alabama, departed Atlanta at 8:32 a.m. The estimated flying time was 57 minutes and the flight plan called for 2000 feet altitude. When the flight was within 25 miles of its destination, it received from Birmingham information that the wind was calm with visibility reduced to one-half mile because of smoke. The flight was ordered to stay above the smoke level. The captain thought that he had been given a smoke level of 3000 feet. Upon checking with Birmingham, that figure was found to be in error and the true smoke level of 2000 feet was established. The flight was ordered to stay at 2000 feet and it proceeded to the range station above the smoke level, arriving over the station at 9:29 a.m. The aircraft was flown out the north leg of the Birmingham range and, while so engaged, it was informed that another scheduled aircraft had reached the vicinity of the airport. Both that aircraft and the subject aircraft were asked whether either cared to land at that time. The captain of Trip 15 replied that because he was flying a shuttle trip, he would let the other aircraft in first. The flight proceeded for three and one-half minutes out the north leg of the range and then made a procedure turn back to the station. Again the aircraft was flown out the north leg and another procedure turn was made back to the station. The pilot stated that at this time he received a weather report giving the visibility at three-fourths of a mile. He acknowledged receipt of this report. The official Weather Bureau report indicates that the 9:35 a.m. observation disclosed that one-half mile visibility existed due to thick smoke. The landing gear was extended and an approach was started. The captain states that because a broadcast starting during his approach interrupted the reception of the radio range signal, he missed the field and started to climb out. While so engaged, he recognized some local terrain and was thus oriented. The aircraft was then flown over the field parallel with the northeast runway but the smoke was thick enough to prevent the pilot from seeing the field

until it was too late to attempt a landing. This approach was from the southwest. The pilot then turned to the west and passed behind a ridge approximately 100 feet high, located north and slightly to the west of the airport. After placing the aircraft on a heading slightly east of south he came in across the top of this ridge. He throttled the engines and made a normal landing off the runway with flaps fully extended. First contact with the ground was made at a point approximately in the center of the usable area in the direction in which he was landing. The captain states that because he was unable to see the far end of the field he decided not to go around again. Brakes were applied increasingly. However, the slippery condition of the field, which had frozen during the night and had then begun to thaw, rendered the brakes ineffective. The aircraft rolled and skidded toward the Administration Building. In an attempt to avoid this building and two parked aircraft which were near it, the pilot applied power to the right engine and applied the left rudder and left brake, with no effect. The aircraft rolled over the edge of the ramp whereupon the pilot released the left brake and applied full left rudder and power to the right engine. The aircraft turned about 60 or 70 degrees to the left and then, while moving very slowly, went up on its nose and left wing.

The direction in which the aircraft was landed affords not only a very short length of usable landing area but also requires that the aircraft be brought in over the previously mentioned ridge which further reduces the usable landing area.

The landing-down-through minimums for daylight operation with Lockheed Model 10-B aircraft, as authorized in Delta Airlines' Weather Letter of Competency and as approved by the Administrator, were, on January 4, 1941:

"Ceiling 900 feet, visibility one mile. Landings permitted when visibility is limited to one mile by purely smoke conditions."

The letter also contains the following paragraph:

"With each increase of 200 feet in ceiling above minimum limitations outlined in weather minimums, visibility reduction of 1/4 mile below the visibility limitations for a particular station hereinabove specified is authorized until a minimum visibility of 1/2 mile is reached. When the visibility is reduced to 1/2 mile under conditions outlined above, a minimum ceiling of 1000 feet or more, depending on the station's original limitation, is prescribed."

The weather conditions at Birmingham as reported by the U.S. Weather Bureau at 9:35 a.m. were: ceiling unlimited, visibility 1/2 mile with dense smoke; wind, east, 2 miles per hour. This report was given to the pilot by the carrier's station operator on the airport shortly after 9:35 a.m. At 9:48 a.m. a special weather report was issued by the United States Weather Bureau, stating that visibility was 1/4 mile, with dense smoke. The Weather Bureau stated that this report was given to the air carrier's field office by interphone, but it was not heard by the operator there. His failure to hear the message could be explained by the fact that the noise level in his office, which is small, is quite high due to the continuous operation of the weather teletype machine and three receivers of different frequency. Since the operator did not hear the message, he obviously could not have relayed the information to Trip 15. However, in this connection, it was found that the Eastern Air Lines operator at Birmingham, to whom the Weather Bureau also reported having sent the special broadcast, did not hear the message and that the Weather Bureau has no record of an acknowledgment from either Delta or Eastern of the special weather report.

Approach lights were not installed at the subject airport. There is every indication that the accident might have been averted if lights had been in use because the aircraft could then have been readily lined up with the runway.

The aircraft was loaded within its authorized weight limit and within the limits of the location of the center of gravity.

As a result of this accident, the Administrator inaugurated an investigation of the ceiling and visibility limitations at Birmingham, which resulted in both being substantially increased. On March 26, 1941, all air carrier operations at Birmingham were suspended. On April 3, 1941, the suspension was modified to allow air carrier operation except between the hours of midnight and sunrise. During the latter part of April the control tower was completed and a complete new interphone system was installed. After this installation had been inspected and approved by the Civil Aeronautics Administration, twenty-four-hour air carrier operation was resumed on May 2, 1941.

PROBABLE CAUSE: Action of pilot in attempting to land under a condition of extremely limited visibility.

CONTRIBUTING FACTORS: 1. Slippery condition of airport surface.
2. Lack of coordination between the Weather Bureau and ground personnel of Delta Airlines.

BY THE BOARD

/s/ Darwin Charles Brown

Secretary