

CIVIL AERONAUTICS BOARD
SAFETY BUREAU

ACCIDENT INVESTIGATION REPORT

Adopted November 10, 1947

Released November 12, 1947

DELTA AIR LINES, INC., MERIDIAN, MISSISSIPPI—NOVEMBER 10, 1946

The Accident

A Douglas DC-3, NC 20750, operated by Delta Air Lines, Inc., as Flight 10, overshot the runway at Key Airport, Meridian, Mississippi, at 1717* CST, November 10, 1946. Considerable damage to the aircraft structure resulted from impact with obstacles beyond the runway. None of the 19 passengers or crew of 3 received other than minor injuries.

History of the Flight

Flight 10 was scheduled between Fort Worth, Texas, and Atlanta, Georgia, with intermediate stops at Dallas, Texas, Shreveport, Louisiana, Monroe, Louisiana, Jackson, Mississippi, Meridian, Mississippi, and Birmingham, Alabama. The aircraft landed at Jackson approximately 1615, November 10, 1946, the flight from Fort Worth having been accomplished without difficulty.

At 1630, the flight departed Jackson under an instrument flight rules clearance to cruise at 3,000 feet to Meridian, with Augusta, Georgia, designated as its alternate airport. Until arriving in the vicinity of Meridian, the flight had been entirely routine. A message was received by the Delta radio station at Meridian indicating that Flight 10 was "in range at 01," or that the flight was within 25 miles of Meridian at 1701. Delta Radio acknowledged the report and transmitted the 1657 Meridian weather to Flight 10 Ceiling 600 feet, visibility 1/2 mile, heavy thunder storm, surface wind *northwest 12*, thunder overhead. This report was acknowledged by the flight.

Flight 10 requested clearance for an unrestricted approach to Meridian at 1707. The Delta station acknowledged this request and advised the flight that Memphis Airway Traffic Control was unable to approve an unrestricted approach and instructed the flight to make its

initial instrument approach at 3,000 feet. At 1710, Flight 10 reported over the Meridian range station at 3,000 feet and informed the Delta station that it was proceeding outbound on the northwest leg. This message was acknowledged by the company station and the flight was immediately advised of the latest Meridian weather Ceiling 800 feet, overcast, visibility 3 miles, thunder storm, light rain showers, surface wind *northeast 10*, thunder storms overhead moving east-northeast, frequent vivid lightning all quadrants.

At 1715, the flight called the company station and asked, "What runway is lighted?" Delta Radio replied that the east-west runway was lighted, whereupon Flight 10 requested that the lights be changed to the northwest-southeast runway, which is designated as Runway 14. Delta Radio replied that between 15 and 20 minutes would be required to change the runway lighting and asked if the flight desired this change made in view of the delay. The flight replied in the negative and advised Meridian to disregard its original request. The east-west runway, therefore, was left lighted.

During this conversation, the flight passed over the Meridian range station and began its descent toward the airport aligned with the northwest-southeast runway. The aircraft was seen to make contact with the runway within the first 1,000 feet, however, it continued rolling down the entire length of the runway with little apparent deceleration. Its forward motion continued beyond the end of the runway and up the western slope of a ditch adjoining the highway adjacent to the airport. On striking this ditch, the aircraft left the ground and bounced over the highway, coming to rest with its nose extended partially over a railroad right-of-way. All passengers were deplaned without difficulty.

Investigation

The aircraft was located on the Yazoo and Mississippi Valley Railroad

*All times referred to herein are Central Standard and based on the 24-hour clock

embankment at a point 500 feet southeast of the end of Runway 14. Prior to the inspection of the wreckage, permission had been granted for the removal of the aircraft from the railroad right-of-way. As a result of impact of the aircraft with the railroad embankment, the lower portion of the nose section was crushed to a point approximately 6 feet rearward, the damage extending into the lower portions of the cockpit. Both wings were damaged from contact with various obstacles beyond the end of the runway. Both landing gear struts were pushed through the upper surfaces of the center section as a result of the severe impact at contact with the ground shortly before striking the railroad embankment. Both engines were torn loose from their mountings, the propellers and engines having been damaged in such a manner that it was apparent that they were not developing power at the time the propeller blades contacted the ground. No malfunctioning or failure was observed in the control systems, and no damage to the aircraft and engines was disclosed other than that caused by impact with obstacles beyond the runway.

An examination was made of the maintenance records of this aircraft, and these records indicated that the aircraft was in an airworthy condition at the time of the departure from Fort Worth. The pilot and co-pilot testified that no difficulty with the aircraft or aircraft equipment was experienced during the course of the flight from Fort Worth to Meridian.

During the afternoon of November 10, a high pressure area was located in the southern midwestern states, with its center in the Oklahoma Panhandle. The cold front associated with this high pressure system was oriented northeast and southwest, and at approximately 1700 was located 15 miles west of Vicksburg, Mississippi, moving northeastward at the rate of approximately 10 miles per hour. The cold front was preceded by a pre-frontal squall line approximately 150 miles east. This squall line was reported to have passed Meridian at 1800.

The first Meridian weather report transmitted to the flight was a result of the 1650 observation which indicated 600 foot precipitation ceiling, sky obscured, thunder storm overhead. The next observation report which was forwarded the flight was filed at 1710 at

the Meridian Weather Bureau Station and indicated that the thunder storm was still overhead and that the ceiling was indefinite, 800 foot overcast. During this period, a heavy rain was falling at Meridian, becoming light rain showers at the time of the approach of Flight 10. At the time of the landing, the runways were wet and a light rain was falling.

In the 1657 and 1710 weather reports, the wind direction and velocity were carried as *northwest* at 12 miles per hour and *northwest* at 10 miles per hour respectively. However, the transcript of the weather transmission to the flight at 1710 indicated a *northeast* surface wind at 10 miles per hour, and the transcript of an interception by the Delta station at Birmingham verified the transmission of the wind direction as being *northeast*.

Although the aircraft made its approach to Meridian shortly after sunset, according to witness testimony sufficient visibility existed at that time for a satisfactory approach and landing at Key Airport without the necessity for runway lights. Runway 14 has no lights of any kind installed. This runway is the shortest runway on Key Airport, having a total length of approximately 4,100 feet. An examination of the tire marks indicated that the aircraft skidded at least 1,962 feet before leaving the end of the runway. Although no marks were observed closer to the approach end of the runway than 2,100 feet, the testimony of witnesses indicates the probability that the aircraft had made its initial touchdown within the first 1,000 feet.

Key Airport has within its boundaries three wind socks, two of which are lighted, and one lighted wind tee, all of which were apparently functioning properly at the time of the accident. The CAA radio range operator at Meridian is located in a small building on the airport with relatively poor visibility in the direction of the landing area. No primary wind direction and velocity indicators are installed in either the Delta radio station or the CAA range station offices. The reports concerning wind direction transmitted to the flight are obtained either from the weather teletype machine or from the Weather Bureau observation log in the nearby weather office. Although a control tower structure is standing on the

airport, no airport control facility is in operation.

Discussion

The investigation of this accident reveals that the company radio operator at Meridian erroneously reported the direction of the wind to Flight 10 as being northeast 10 miles per hour when it was in fact northwest at 10 miles per hour. Air carrier radio operators are not regarded as "airmen" under the definition providing for certification of personnel essential to the operation of air carrier aircraft. Company radio communicators are utilized as intermediary personnel in an advisory service whose function it is to relay information prepared by a qualified specialist. Wind information obtained at airports at which no tower facilities exist is relayed to the air carrier communications personnel from the latest Weather Bureau observation and this wind information does not necessarily represent the wind conditions existing at the moment of the communication. While the error in this instance was no doubt misleading, in the absence of a control tower facility at Meridian, the decision with respect to direction of landing rested entirely with the pilot. Knowing that thunder storms were passing Meridian at the time of his approach, the pilot should have been particularly alert to surface wind conditions regardless of the wind direction reported. It was, therefore, incumbent upon the pilot to exercise every reasonable care in the selection of a runway consistent with existing wind direction and velocity and such other conditions as may be involved.

The existence of three wind socks and one wind tee, all of which were apparently functioning properly at the time of the accident, leaves no doubt that ample facilities existed to enable the pilot to check personally the wind direction before landing. The minimum ceiling and visibility of 400 feet and one mile for Key Airport is so designated by the Civil Aeronautics Administration to permit an aircraft to circle the airport safely in order to land on any runway the existing wind may require. The existing ceiling of 800 feet was, therefore, ample to permit circling the airport if in this instance it had not been possible to determine the wind

direction during the approach from the range station.

The request of the pilot for a change of the runway lights to Runway 14 is significant in that it leaves considerable doubt as to familiarity of either the radio operator or the pilot with the airport, since no contact lights or end markers were installed on this runway. Furthermore, since the direction in which the pilot landed was almost at right angles to the direction of the reported wind, the choice of Runway 14 was apparently determined on the basis of the lesser time required for a straight-in approach than for one in which some circling would be necessary.

Having chosen to use Runway 14, the flight made initial touchdown with a tail wind of between 10 and 15 miles per hour. The coefficient of friction of rubber tires on wet runway surfaces is very low at high touchdown speeds, and the poor traction from braking action resulted in the aircraft's skidding for almost 2,000 feet.

Findings

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

1. The aircarrier, aircraft, and the crew were properly certificated.
2. At the time of departure from Fort Worth and, thereafter, from each intermediate station, the aircraft was properly loaded with respect to its maximum permissible gross weight, and its center of gravity was within approved limits.
3. The flight from Fort Worth to a point 25 miles west of Meridian had been accomplished without difficulty.
4. After having reported over the Meridian range station at 3,000 feet, the flight was erroneously informed by the company station that the wind direction was northeast instead of northwest.
5. Three wind socks and one wind tee were located on the airport and were operating satisfactorily at the time.
6. The pilot requested that Runway 14 at Key Airport be lighted although no lights exist on this runway.
7. Runway 14, which is approximately 4,100 feet long, is the shortest runway at Key Airport.
8. An approach was established for Runway 14 with a tailwind of between 10 and 15 miles per hour.

9. Initial touchdown was made within the first 1,000 feet on Runway 14.

10. During the landing, the runway surface was wet and a light rain was falling.

11. After rolling for at least 1,000 feet, the aircraft skidded the remaining 2,000 feet of the runway.

12. The aircraft continued beyond the end of the runway and crashed into a railroad embankment adjoining the airport.

Probable Cause

The Board determines that the probable cause of this accident was the poor

judgment of the pilot in landing on a wet runway under conditions of varying winds without ascertaining visually the direction of the wind. A contributory factor was the error of the company radio communicator in transmitting the wind direction.

BY THE CIVIL AERONAUTICS BOARD

/s/ J. M. LANDIS
/s/ HARLLEE BRANCH
/s/ JOSH LEE

Ryan, Vice Chairman, did not take part in the decision

Supplemental Data

Investigation and Hearing

The Civil Aeronautics Board was notified of the accident at 1915, November 10, 1946. An investigation was immediately initiated in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended, however, due to inclement weather, the arrival of the Chief Investigator, Atlanta Region, was delayed until approximately 1030 on November 11. The aircraft was placed under guard immediately following the accident and was maintained under guard until the inspection of the wreckage was completed. A public hearing was ordered and was held at Atlanta, Georgia, November 19, 1946.

Air Carrier

Delta Air Lines is incorporated in the State of Louisiana as an air carrier operating under a certificate of public convenience and necessity and an air carrier operating certificate, both issued pursuant to the provisions of the Civil Aeronautics Act of 1938, as amended. These certificates authorized the company to transport persons, property and mail in scheduled air carrier operations throughout various points in the United States, including Fort Worth, Texas, and Meridian, Mississippi.

Personnel

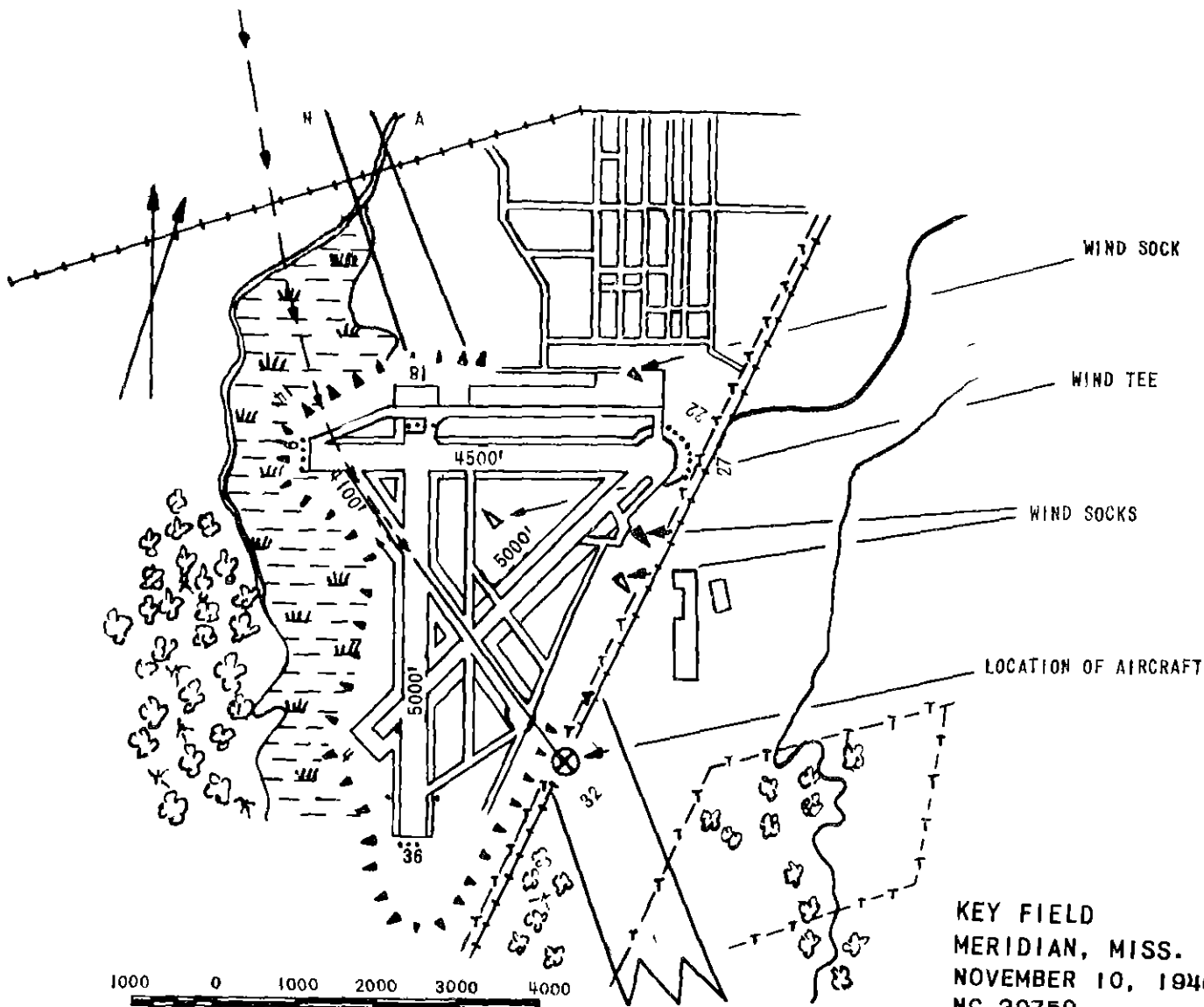
Henry L. Laube, age 31, of College Park, Georgia, was captain of the aircraft. Mr. Laube possessed an airline

transport pilot rating and until the date of the accident had accumulated a total of 3,725 hours flying time, of which 3,100 hours had been obtained in DC-3 equipment. P. Raymond Crocker, Jr., age 29, of East Point, Georgia, was copilot. Mr. Crocker possessed a commercial pilot certificate and commercial rating, and until the date of the accident he had accumulated a total of 3,207 hours, of which 301 hours had been obtained in DC-3 equipment. Miss Frances Amacker, of College Park, Georgia, was stewardess.

Aircraft

The Douglas DC-3, NC 20750, was owned by the Reconstruction Finance Corporation and leased to Delta Air Lines, Inc. It had been operated a total of 8,819 hours, of which 5,646 hours had been accumulated since the last major overhaul. It was equipped with two Wright G-202A engines on which Hamilton Standard propellers were installed. The left and right engines had been operated a total of 8,544 hours and 5,030 hours respectively, of which 38 hours and 824 hours respectively had been obtained since the last major overhaul. At departure from Jackson, Mississippi, the total weight of the aircraft was approximately 470 pounds less than the allowable gross limits, and the load was distributed with respect to the center of gravity within approved limits.

(II)



—17839