

AIR SAFETY BOARD

REPORT

TO THE CIVIL AERONAUTICS AUTHORITY

AS A RESULT OF AN INVESTIGATION OF AN ACCIDENT INVOLVING AIRCRAFT

Accident involving aircraft NC 17316
of Transcontinental and Western Air,
Inc., in the vicinity of Albuquerque,
New Mexico, on August 24, 1938.

An accident involving aircraft of United States Registry, NC 17316, while operating as Flight 4-10 of August 23, 1938, of Transcontinental and Western Air, Inc., having occurred in the vicinity of Albuquerque, New Mexico, on the twenty-fourth day of August, 1938, at approximately 2-33 o'clock A. M. of said date; such accident having been investigated, and the Air Safety Board having considered the evidence adduced therefrom, reports the following facts, conditions, and circumstances relating to the said accident, its findings, and its conclusions as to the probable cause thereof:

FACTS, CONDITIONS, AND CIRCUMSTANCES:

AIR CARRIER:

Transcontinental and Western Air, Inc., a corporation incorporated under the laws of the State of Delaware, as authorized by currently effective Air Carrier Operating Certificate issued by the Civil Aeronautics Authority, operates as an air carrier via certain named intermediate points between the terminal points of Newark, New Jersey and Burbank, California. Application has been filed, consistent with the provisions of the Civil Aeronautics Act of 1938, with the Civil Aeronautics Authority for Certificates of Public Convenience and Necessity over certain routes, including the route above named.

Transcontinental and Western Air Flight 4-10 of August 23, 1938, scheduled to operate between Burbank, California and Kansas City, Missouri, - with scheduled intermediate stops at Winslow, Arizona; Albuquerque, New Mexico, Amarillo, Texas; and Wichita, Kansas; - arrived at Albuquerque, New Mexico at 2:16 A. M. on August twenty-fourth.

AIRCRAFT:

Aircraft NC 17316, operated on this flight, was a Douglas, Model DC-3B, manufactured by the Douglas Aircraft Corporation of Santa Monica, California. This model aircraft is approved by the Civil Aeronautics Authority, for air carrier operation over the route flown by Transcontinental and Western Air, Inc., with an approved gross weight of 24,400 pounds. It was powered with two Wright Cyclone, model G102, engines and Hamilton Constant Speed propellers, hub models 3850-2013 and blade models 6105A-19.

ATTEND:

Consistent with approved Company procedure over this route, Captain Harold E. Hess and First Officer Bronson White took over the flight at Albuquerque, New

Mexico. Captain Harold G. Hess had accumulated a total of approximately 4950 hours of flying time, of which 134 hours were in Douglas DC-3 aircraft as Captain, and 844 hours in DC-3 aircraft as First Officer. First Officer Bronson White had accumulated a total of approximately 942 hours flying time, of which 126 hours in DC-3 aircraft. Both airmen were possessed of required ratings and Certificate of Competency for the flight and equipment involved. Miss Olga C. Harbaugh was stewardess on the trip.

The trip proceeded normally from Burbank, California to Albuquerque, New Mexico, where it was cleared in a manner consistent with approved company procedure, departing from Albuquerque at 2:26 A. M.

WEATHER:

Weather conditions at the time of departure from Albuquerque were: Ceiling unlimited, visibility 50 miles, temperature 67°, dew point 43°, wind calm indicated west, barometer 29.95.

At the time of departure from Albuquerque the gross weight of the aircraft was 23,182 pounds, including mail, cargo, 611 gallons of fuel, 164 quarts of oil, and the following passengers:

Mrs. Q. R. Smith, address given as Bel-Aire, California
Quentin Smith (age 9), address given as Bel-Aire, California
Mr. Q. R. Smith, address given as Bel-Aire, California
Paddy Smith (age 3), address given as Bel-Aire, California
Miss M. Citron, address given as Los Angeles, California
Mr. S. A. Mitchell, address given as Jacksonville, Florida
Miss E. J. Smith, address given as Kansas City, Missouri
Mrs. M. D. Richardson, address given as Kansas City, Missouri

The aircraft started the take-off, from the south end of the north-south runway, at approximately 2:31 A. M., leaving the ground after having used about two-thirds of the available runway, and crossing the field boundary in a normal climb. The engines functioned normally during warm-up and take-off. Shortly after passing the field boundary, the indicated airspeed was approximately 118 miles per hour; tachometers indicated 2200 RPM, and the manifold pressure was 37 inches. At this time the RPM were reduced to 2000, by use of the propeller pitch controls, and the landing lights were turned off. The Captain then started to reduce manifold pressure and, simultaneously with such action, the left engine became very rough, and vibration increased rapidly, resulting in loss of power to such extent that the aircraft had a tendency to turn to the left. The right engine was increased to full power and the power of the left engine reduced. Landing lights were turned on in order to determine the height above ground, which was estimated by Captain Hess to have been 75 to 100 feet. As the aircraft had a tendency to settle, a 5 degree turn to the right was made, in an effort to reach terrain more suitable for an emergency landing. The throttle of both engines was opened full, in an attempt to clear rising terrain which was noted directly ahead, and to effect an emergency landing beyond.

The attempt failed, and contact was made with the top of the rise, with the wheels in the "up" position. Just before reaching the point of first contact, the indicated airspeed was approximately 100 miles per hour and the aircraft was in comparatively level flight and settling. Both propellers struck the ground simultaneously, cutting into the soft sand over a distance of approximately 40 feet.

From this point the wheels in retracted position made contact with the ground over a distance of approximately 70 feet, and the oil scoops were torn off.

With engines at full throttle, the damaged propellers developed sufficient thrust to carry the aircraft forward. However, power, adequate to sustain continued flight, was not available, and the aircraft again settled, striking the ground a proximately 0.7 miles from the point of initial contact. The pilot closed the throttles just prior to the impact. The aircraft struck the ground in a comparatively level attitude, with the landing gear still in retracted position, skidded for a distance of 333 feet, tearing off the left engine and left wheel, and came to rest, headed in a south-southwesterly direction.

No serious injuries were reported as having been suffered by anyone aboard the aircraft.

The left engine and propeller were disassembled at Kansas City, on September 1, 1938. Minute inspection disclosed considerable damage as a result of crash, although nothing was found which would account for the reported vibration and loss in power following the Albuquerque take-off.

FINDINGS:

1. Aircraft NC 17316 was certificated as airworthy by the Civil Aeronautics Authority, and had been inspected and maintained in accordance with approved maintenance procedure of Transcontinental and Western Air, Inc.
2. Both airmen held required ratings and Certificates of Competency for the flight and equipment involved.
3. Transcontinental and Western Air Flight 4-10 of August 23, 1938, was properly dispatched from Burbank, California, and was subsequently cleared to Winslow, Arizona, Albuquerque, New Mexico and Amarillo, Texas, in accordance with approved company procedure and Air Carrier Operating Certificate issued to Transcontinental and Western Air, Inc., by the Civil Aeronautics Authority.
4. Weather conditions at Albuquerque, New Mexico at the time of take-off were Clear, ceiling unlimited, visibility 50 miles, wind calm.
5. The take-off and climb were normal until shortly after the aircraft had passed the north boundary of the airport.
6. After passing the field boundary, the left engine became very rough, setting up vibration in the aircraft, of such intensity, as to cause the pilot to throttle that engine.
7. Subsequent application of full throttle to the left engine did not result in sufficient power to clear rising terrain.
8. The aircraft was in a level attitude, with wheels retracted, and settling, at the time the propellers first made contact with the ground.
9. After contacting the ground with propellers and wheels for a distance approximating 110 feet, the aircraft took to the air, and after traveling approximately 0.7 miles under full throttle, again settled to the ground in a level attitude, wheels up, and skidded for a distance of 333 feet.

10. Subsequent inspection of the engine, after complete disassembly, failed to disclose the cause of the malfunctioning.

PROBABLE CAUSE

Excessive vibration and loss of power, due to malfunctioning of left engine, resulting in insufficient speed to sustain the aircraft in flight.

RECOMMENDATIONS:

The cause of the malfunctioning of the left engine being undetermined, recommendations, which would tend to prevent similar accidents in the future, cannot be made at this time.