

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

An airline accident, which resulted in major damage to a Douglas DC-3-A airplane, NC 16064, owned and operated by United Air Lines Transport Corporation, occurred on June 10, 1941, at about 9:09 p.m. at the Municipal Airport, Denver, Colorado. No injuries were received by any of the 15 passengers or the crew of three. The crew consisted of Captain E. B. Jeppesen and First Officer F. W. Allan, both of whom were properly certificated and appropriately rated, and Stewardess Carol MacMillan.

The flight, designated by United Air Lines as Trip 2, originated at Oakland, California, with New York as its destination. Intermediate stops were scheduled at San Francisco and Sacramento, California; Reno, Nevada; Salt Lake City, Utah; Denver, Colorado; Omaha, Nebraska; Chicago, Illinois; and Cleveland, Ohio.

The trip proceeded uneventfully to Salt Lake City where Captain Jeppesen and First Officer Allan took over. It departed Salt Lake City at 6:29, 19 minutes behind schedule, the delay having been caused by awaiting the arrival of a connecting flight from Los Angeles. The flight proceeded without incident to the DeCone Marker at which point a report of the Denver Kollsman setting and surface winds was obtained. The wind at that time was reported as calm. When the flight was west of Brighton the following landing information was received by radio from the Denver tower operator: "Wind NNE 5 to 10 miles per hour; no traffic." When Trip 2 had reached a point about 2 miles northwest of the Denver Airport, First Officer Allan again contacted the tower and in reply to his inquiry he was told that the entire N-S runway was available, that flame pots marked its intersection with the NE-SW runway and that Trip 2 was cleared over Lowry Field. When Trip 2 was west of the field the tower called, asked if the flight was "contact" and received a reply in the affirmative. The tower operator then reported that a moderate rain was falling. At that time the visibility as observed by the crew was over five miles in all directions. The landing gear was lowered and a routine cockpit check was conducted. During the final approach Trip 2 again requested wind velocity and direction. The tower reported that it was NNE 3 miles per hour and that Trip 2 was cleared to land.

At the south end of the 7,000-foot N-S runway, Trip 2 was about 60 feet above the ground and its indicated air speed was about 105 miles per hour with flaps one-half down. Captain Jeppesen stated that, although visibility was somewhat restricted by rain on the windshield, he could see for a distance of several miles and could distinctly pick up the runway with the landing lights and that the windshield was therefore not opened. He stated that his approach was planned to contact the runway north of the flare-marked intersection and thus to avoid possible collision with equipment on which flares might have been extinguished

by rain. Just before wheel contact was to have been established, gusty wind was encountered and rain reduced the visibility through the windshield to zero. Applying partial power to maintain flying speed, Captain Jeppesen continued flight at 85 miles per hour until restored visibility enabled him to complete the landing. Actual wheel contact was made at approximately 80 m.p.h. indicated air speed, with between 2400 and 3000 feet of runway in which to stop rolling. Captain Jeppesen applied pressure to the brake pedals without noticeable response; then the captain and first officer applied pressure to the brake pedals simultaneously but obtained no noticeable response until they were within 200 to 300 feet of the end of the runway. The plane, still moving at 20 to 25 miles per hour, continued north through the boundary lights and across a 3-foot ditch, where the right landing gear failed, to a point 221 feet north of the boundary lights.

Investigation disclosed no mechanical defect in the braking system. Although the tires were found to be worn, their condition did not show any localized abrasion such as would be expected to result from skidding. Captain Jeppesen, with more than 10,000 hours of flying, has an exceptional record for reliability and sound judgment. It was his opinion that, with normal braking effect, there was adequate room to stop.

PROBABLE CAUSE: Ineffective brake action.

- CONTRIBUTING FACTORS: 1. Extended landing approach due to restricted visibility.
2. Slipperiness of runway surfaces due to rain.

BY THE BOARD:

/s/ Darwin Charles Brown
Secretary