

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted April 23, 1947

Released: May 1, 1947

TRANSCONTINENTAL & WESTERN AIR, INC., NEW CASTLE, DELAWARE, OCTOBER 12, 1946

The Accident

A Lockheed Model 049, Constellation, NC 86512, owned and operated by Transcontinental & Western Air, Inc., overshot the runway at New Castle County Airport, New Castle, Delaware, at 1815E,* October 12, 1946, and was destroyed in the fire which followed the crash. Three occupants of two automobiles which were on the highway adjoining the airport and which were struck by the aircraft, sustained minor injuries. None of the eight occupants of the aircraft, all of whom were crew members, was injured.

History of the Flight

NC 86512, hereinafter referred to as Aircraft 512, was being ferried to New Castle, Delaware, from New York, New York, following a scheduled flight from Paris, France. The aircraft departed LaGuardia Field at 1719, October 12, 1946, on an instrument flight rules clearance with New Castle as its destination and Philadelphia, Pennsylvania, as its alternate airport.

The flight progressed according to the flight plan between New York and Philadelphia at which point visual flight rules weather conditions were encountered. The flight reached the vicinity of Wilmington, Delaware, at 1805 from which area the pilot sighted New Castle Airport and contacted New Castle Tower by radio. In acknowledgment of the in-range report, New Castle Tower informed the flight that a squall was approaching the airport and that the weather was worsening rapidly. The aircraft circled the airport twice at an altitude of approximately 1,800 feet during which the pre-landing cockpit check was completed.

While Aircraft 512 was in the vicinity of New Castle, a line squall passed over the airport. In view of the weather conditions at the time, the company operator in the tower called the flight and suggested that it proceed to Philadelphia for a landing. The captain replied that he had the field in sight and was establishing an approach for Runway 14. At approximately this time, the wind shifted from southeasterly to westerly at 25 to 35 mph. New Castle Tower again called the flight advising the pilot of this wind-shift. The tower operator suggested to the flight that it use Runway 27 and asked if the pilot desired the contact lights for that runway turned on. The captain replied that the aircraft was aligned with Runway 14 and that he would proceed with caution.

Although a light rain was falling during the final approach, the captain stated that it did not

materially restrict the visibility. A full flap landing was made and, during the subsequent landing roll, brakes were applied intermittently. However, no deceleration due to braking action was apparent to any of the aircraft occupants.

When it became apparent that the aircraft could not be stopped on the runway, the captain applied power to the engines in an unsuccessful attempt to become airborne. The aircraft continued beyond the end of the runway and across DuPont Highway which adjoins the airport. Two automobiles on the highway were struck by Aircraft 512 and their occupants injured. The aircraft continued another 650 feet in a south-easterly direction and, after coming to rest in an open field, fire broke out completely destroying the aircraft.

Investigation

Examination of the maintenance record of Aircraft 512 indicated no mechanical deficiencies, and no evidence was disclosed that the aircraft was not completely airworthy at the time of departure from LaGuardia Field. Inspection of the wreckage did not disclose any evidence of malfunctioning of the aircraft brake system, control system, flaps or power plants. No mechanical failure was noted other than that caused by impact with obstructions beyond the runway and the subsequent fire, nor did the crew indicate that any malfunctioning of the aircraft was apparent prior to the accident.

A reconstruction of the weather at New Castle during the evening of October 12, 1946, indicates the passage of a line squall at approximately the time of the landing. The ceiling throughout the period of the approach and landing remained above 1500 feet and the visibility at least seven miles. Statements of witnesses clearly indicate that a change in wind direction occurred as Aircraft 512 was establishing its final approach to Runway 14. At the time of the landing the wind was reported as westerly at 25 to 35 mph. The precipitation simultaneously increased from a light drizzle to heavy showers.

The captain elected to attempt a landing at New Castle although on at least one occasion while the aircraft was in the vicinity of New Castle it was recommended by the control tower that he proceed to an alternate airport. The testimony of both the flight crew and control tower personnel indicates conclusively that the captain was adequately advised of the conditions prevailing at New Castle and that he was completely informed of the change in wind direction which occurred during the approach but nevertheless elected to land downwind. Throughout this period the airport wind indicator was in operation and lighted, and was plainly visible from the

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

approach to Runway 14. The aircraft windshield wipers were functioning normally and both landing lights were used.

The minimum landing speed of Model 049 aircraft in no-wind conditions under the existing load is approximately 75 mph. Because of a tail wind component of between 16-22 mph, the touchdown speed in this instance was approximately 20% higher than normal. Inspection of tire marks on the runway indicated that initial touchdown was made approximately 2100 feet from the approach end of the runway, leaving 3100 feet of usable runway surface in which to decelerate.

Discussion

Recent studies of tire traction on runway surfaces indicate that the coefficient of friction of rubber tires on wet surfaces may be as low as 30% of that on dry surfaces at the landing speeds of Model 049 aircraft. It is apparent that the pilot in this instance seriously overestimated the tire traction obtainable under the existing conditions.

The investigation of this accident indicates the poor judgment on the part of the pilot in failing to abandon the downwind approach when advised of the windshift, and establish a new approach to a runway for which more favorable wind direction prevailed or to proceed to an alternate airport. At no time during the approach was the condition of the aircraft such that a go-around could not have been accomplished with complete safety. However, even after overshooting the first 2100 feet of the runway, the pilot persisted in his attempt to land and neglected to initiate go-around procedures until too little runway remained to permit the aircraft to accelerate sufficiently to take off again.

Findings

On the basis of all available evidence the Board finds that

1. The company, aircraft and crew were properly certificated.
2. Prior to departure from New York, the total weight of the aircraft was considerably less than the maximum allowable gross.

3. That portion of the flight from New York to New Castle had been completed without difficulty.

4. At the time the aircraft arrived in the vicinity of New Castle a line squall was approaching the airport.

5. The captain was adequately informed of the weather conditions prevailing at New Castle.

6. Although advised by the tower to proceed to an alternate airport, the captain elected to land at New Castle Airport.

7. Although advised by the tower of a wind shift of approximately 145 degrees, and the availability of a suitable runway into the wind, the captain elected to continue a downwind approach to Runway 14.

8. During the final approach the precipitation increased from light drizzle to heavy showers.

9. At the time of the landing the tailwind component along Runway 14 was at least 16 mph.

10. The aircraft failed to make contact with the ground until having passed over 2100 feet of the runway.

11. The aircraft failed to decelerate completely within the remaining 3100 feet of the runway.

12. When it became apparent that the aircraft would not stop on the runway the pilot applied power in an unsuccessful attempt to become airborne.

13. The aircraft continued beyond the end of the runway, through the trees bordering the airport, across DuPont Highway, and came to rest in an open field.

14. After coming to rest the aircraft was almost totally destroyed by fire.

Probable Cause

The Board determines that the probable cause of this accident was the poor judgment of the pilot in continuing in his attempt to land on a wet runway with a tailwind component in excess of 16 mph after having passed 2100 feet of the runway.

BY THE CIVIL AERONAUTICS BOARD

/s/ Oswald Ryan

/s/ Harllee Branch

/s/ Josh Lee

Landis, Chairman, and Young, Member, did not take part in the adoption of this report.

Supplemental Data

Notification

The Board was notified of the accident during the early morning of October 13, 1946 and an investigation was immediately initiated in accordance with Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. Personnel of the Board's New York Office arrived at the scene of the accident at 1135 October 13, and were subsequently assisted by other personnel of the Board's Safety Bureau staff.

Air Carrier

Transcontinental & Western Air, is incorporated in the State of Delaware and maintains the headquarters of its International Division at Washington, D C, and its primary maintenance base at New Castle, Delaware. Transcontinental & Western Air, Inc, operates as a scheduled air carrier of persons, property and mail, in accordance with certificates issued pursuant to the provisions of the Civil Aeronautics Act of 1938, as amended.

Personnel

Captain Budlong Miles Merrill, age 42, of Washington, D C, was pilot in command of the aircraft. Until the date of the accident, he had accumulated a total of 9,600 hours' flying time, of which 3,450 hours were obtained in four-engine aircraft, and 150

hours in the Model 049. Captain Merrill possessed an airline transport rating which was effective on the date of the accident.

Flight Officer Gerhard N Schemel of Chicago, Illinois was co-pilot. Mr Schemel possessed a commercial pilot certificate and instrument rating and, until the date of the accident, had accumulated a total of 3,000 hours' flying time, of which approximately 50 hours had been obtained in Model 049 aircraft. H Henry, flight engineer, K. L. Jones, radio officer, G L Clarkson, navigator, and Barbara Soper, hostess, comprised the remainder of the crew. E J Gafney, steward, and S B Hodges, navigator, were crew members of the aircraft in off-duty capacity.

Aircraft

NC 86512, a Lockheed Model 049-46-26, Constellation, was manufactured in January, 1946 and had been operated a total of 1,195 hours. The aircraft was equipped with four Wright 745C-183A-3 engines, on which Hamilton Standard propellers were installed. The No 1 engine had been operated a total of 249 hours, and the Nos 2, 3 and 4 engines 210 hours since the last major overhaul. At the time of departure from LaGuardia Field, the total weight of the aircraft was considerably less than the maximum gross load, and the weight was distributed with respect to the center of gravity within approved limits.