

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: August 1, 1949

Released: August 2, 1949

FAIRCHILD, M-62-A, NEAR COLLEGE PARK, GEORGIA, JUNE 27, 1948**The Accident**

At approximately 1415,¹ June 27, 1948, a Fairchild M-62-A, NC-46363, owned and operated by the Johnston Aircraft Corporation, crashed near College Park, Georgia. Of the two occupants, the pilot, Charles R. Allen, parachuted to safety, and the passenger, Carolyn Taylor, was killed. The aircraft was destroyed by impact.

History of the Flight

Charles Allen rented a Fairchild airplane June 27, 1948, from the Johnston Aircraft Corporation of Atlanta, Georgia, to make a pleasure flight carrying Carolyn Taylor as passenger. Both were equipped with seat type parachutes and Miss Taylor was instructed in the use of the parachute prior to take-off by the Chief Pilot of the Johnston Aircraft Corporation. Take-off was accomplished from the Atlanta Municipal Airport at 1345. Pilot Allen climbed to an altitude of 3,000 feet, after which a number of steep turns were performed. Then, according to the pilot, a shallow dive was executed, and when the air speed reached 130 miles per hour a climbing turn to the right was started. During this turn the right wing separated from the aircraft. The pilot stated that he called to the passenger to jump, but received no response. He then unbuckled his safety belt and was thrown from the aircraft. The pilot's parachute opened and he descended safely to the ground. The aircraft crashed 6-1/2 miles south of the Municipal Airport in a wooded field. The passenger, remaining in the aircraft, was killed and the aircraft was destroyed.

Investigation

Ground markings showed that the aircraft struck at a near vertical angle.

¹ All times referred to herein are Eastern Standard and based on the 24-hour clock.

The impact crushed the fuselage and severely damaged the left wing and tail surfaces. The engine was buried approximately three feet in the ground. No evidence of fire was found.

The passenger was found in the wreckage with safety belt and shoulder harness fastened around her and attached to the seat. The parachute was in its case, however, the "pilot chute," which opens first and pulls the main chute free of the case, was found partially opened. The rip cord cable was completely free from its housing.

The right wing, with the outer part of the right center section and the landing gear still attached, was found 1,500 feet north of the main wreckage. Approximately 1,200 feet north of the right wing miscellaneous pieces of the center section skin and ribs were found scattered over a wide area. Examination of the fractured parts indicated a structural failure of the front spar in the center section. The failure was in the lower cap of the spar at the fuselage attachment fitting, the wood there having failed in tension.

The front spar is of a box-type construction consisting of upper and lower laminated spruce caps, wood compression blocks, and 45 degree plywood webs. The various parts are joined by glue. At the point of failure there was a pre-existing compression failure in the forward part of the bottom lamination. Discoloration of the edges of the compression failure indicated that it had existed for some time previous to the accident. The compression block immediately above this point was split in a manner indicating that the lower cap failed in tension. It also showed indications of poor glue adhesion.

The upper cap of the front spar failed in rearward and upward bending at a point 24 inches outboard of the fuselage attachment fitting. This failure followed

the separation of the lower cap of the spar. Following the total failure of the front spar, the rear spar, also of box-type construction, failed from a rearward and upward bending at a point 36 inches outboard of the fuselage attachment fitting.

The examination of the wing disclosed that between the points at which the upper and lower caps of the front spar failed, there were large areas where the glue joints separated due to poor adhesion. Furthermore, where the center section lower plywood skin joins with the root nose rib and front spar, the skin and root rib were discolored and deteriorated, due to the absorption of moisture and oil over a long period of time. The glue joints in this area were also badly deteriorated and the aft portion of the root rib where it joins with the rear spar showed a deterioration of both wood and glue due to moisture and oil.

Originally the wing contained drain holes on the underside to prevent the accumulation of moisture and oil, however, the center section of the wing had been recovered March 19, 1948, and the drain holes had been sealed over by fabric. An Airworthiness Directive issued by the Administrator February 16, 1948, specifically required that these drain holes be kept open and that sea-plane type grommets be installed.

The annual inspection of the aircraft, which should have included an examination for deterioration, was accomplished on March 21, 1948, at which time the airplane was declared airworthy by an Agent of the Civil Aeronautics Administration. Such an examination should also have been made at the time of the last 100-hour inspection² which was accomplished on May 20, 1948, and certified to by an A&E mechanic.

² Under section 43.22 of the Civil Air Regulations, an aircraft shall not be flown for hire unless within the preceding 100 hours of flight time it has been given a periodic inspection by an appropriately rated mechanic, and has been found to be airworthy

At the time of the accident there was a 4,000-foot ceiling, 15 miles visibility, and the wind from 270 degrees at six miles per hour. There was no evidence of turbulence. Therefore, the weather is not considered a factor.

Analysis

The right wing was under design strength as a result of a pre-existing compression failure, poor adhesion in the glue joints of the front and rear spar, and the deterioration of the lower plywood skin and root rib in the center section. The deterioration was caused by the absorption of moisture and oil. The wing structure, being under strength for the above reasons, failed when it was subjected to a load during a right climbing turn.

The evidence shows clearly that had the drain holes been open as specifically required by the Airworthiness Directive, they would have tended to prevent an excessive accumulation of moisture and oil in the wing panel. Furthermore, a thorough inspection at the time of the annual inspection and also at the last 100-hour check would have revealed that the drain holes were closed, and also might have revealed the deteriorated condition of the wing structure.

Findings

1. The pilot was properly certificated.
2. The front spar of the right wing center section failed at the fuselage attachment fitting, allowing the wing to separate from the aircraft.
3. At the point of failure there was a pre-existing compression failure.
4. The root rib and skin in the right wing were deteriorated due to absorption of moisture and oil in the area where the root rib joins the front spar.
5. Poor adhesion existed in the glue joints of the front spar webs at the point of initial failure.
6. An Airworthiness Directive was issued by the Civil Aeronautics Administration, February 16, 1948, which required that the drain holes in the

underside of the wing of the Fairchild M-62-A be kept open, and that they be equipped with seaplane type grommets.

Probable Cause

The Board determines that the probable cause of this accident was a structural failure of the front spar resulting from a deteriorated condition of the wing structure

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BY THE CIVIL AERONAUTICS BOARD:

/s/ JOSEPH J O'CONNELL, JR

/s/ OSWALD RYAN

/s/ RUSSELL B ADAMS

Josh Lee and Harold A. Jones, Members of the Board, did not participate in the adoption of this report.

Supplemental Data

Investigation

The Civil Aeronautics Board, Region II, was notified of the accident at 1500, June 27, 1948, by the communications station of the CAA. An investigation was initiated immediately in accordance with provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. A public hearing was conducted as part of the investigation in Atlanta, Georgia, July 16, 1948.

Owner and Operator

Johnston Aircraft Corporation, a Georgia corporation, is an approved Flight School, holding a CAA certificate with private, commercial, engine, instrument, and advanced ground school ratings. It is engaged in the general business of flight instruction, flight sales, rental of aircraft, maintenance of aircraft, and general operation.

-15277

Aircraft

The aircraft NC-46363, an M-62-A3, Army designation PT-19, was manufactured in August 1943, and had been flown a total of 2,032 hours. It was equipped with a Ranger engine, Model #6-440-C5, and a Hartzell propeller. The last 100-hour inspection had been accomplished on May 20, 1948.

Pilot

The pilot, Charles R. Allen, age 20, holds airman certificate #98215, issued May 3, 1946, with a rating as a private pilot, single engine, land. He had logged a total of 120 hours, nine of which had been obtained in the Fairchild M-62-A. The passenger, Carolyn Taylor, age 20, was not a pilot and had no previous aeronautical experience.

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