

CIVIL AERONAUTICS BOARD
ACCIDENT INVESTIGATION REPORT

Adopted: August 4, 1948

Released: August 4, 1948

CAPITAL AIRLINES - NEAR HARTFIELD, VIRGINIA - MAY 8, 1947

At 1830*, May 8, 1947, a Capital Airlines' Douglas DC-3, aircraft NC-11917, while on a ferry flight from Norfolk, Virginia, to Washington, D.C., executed an emergency landing in a field two miles southwest of Hartfield, Virginia. The only occupants, Captain Richard M. Hawes, and First Officer Milton J. Balog, were not injured, but the aircraft was substantially damaged.

During the day of May 8, the oil lines, oil sumps, and oil screens of the left engine of NC-11917 had been cleaned at Norfolk to correct a loss of oil pressure which had been noted during a previous flight. The aircraft was then test-flown, and the engine operated normally except for a four or five minute period during which the oil pressure dropped to 10 pounds below the minimum pressure of 50 pounds psi. During a subsequent ground check the engine operated normally. It was decided that the aircraft should be ferried to Washington, where company maintenance facilities would permit thorough inspection and repair. Accordingly, NC-11917 departed from Norfolk for Washington at 1807, May 8, 1947, loaded with only 360 gallons of fuel and no passengers or cargo.

The flight proceeded normally at 1,000 feet until it arrived at a point 49 miles northwest from Norfolk. Then, a loud noise was heard from the left engine. Oil pressure dropped, and the engine vibrated excessively. The left

* All times noted in this report are Eastern Standard and based on the 24-hour clock.

propeller could not be feathered. The vibration became more severe, and sparks and spreading oil between cylinders No. 1 and No. 9 were observed. An emergency landing was made in a nearby pasture, with the flaps fully extended and the landing gear retracted.

The resulting damage was that normally expected from a flaps-down, wheels-up landing. The flaps were torn and twisted, and the center section scraped.

An examination of the left engine showed that the No. 1 and No. 9 cylinders were split. The feathering line had been severed, which accounted for the inability of the pilot to feather the propeller during flight. All the articulating rods and the master rod were broken, only the stubs remaining attached to the crankshaft. This had resulted in a severe vibration as the crankshaft revolved. Laboratory tests showed a fatigue fracture in a broken segment of one of the articulating rods, but it could not be determined which rod contained this defect, because of the degree of breakage to the internal parts of the engine.

NC-11917 was equipped with Wright Cyclone G-102-A engines, and Hamilton Standard 23-E-50 propellers. The left engine had been operated 19,724 hours since new. It had accumulated 392 hours since its last major overhaul, which the CAA required to be made every 850 hours, and 33 hours since its last 260-hour check. Both propellers had been operated 2,198 hours since new. The maintenance records of the aircraft were examined and found to be satisfactory.

Weather conditions in the emergency landing area consisted of unlimited ceiling and visibility and were not considered a factor in this accident.

Captain Hawes, age 29, held an airline transport pilot rating. He was employed by Capital Airlines in September, 1942, as a co-pilot and qualified as a captain September 29, 1945. At the time of the emergency landing, he had logged a total of 4,000 flying hours, of which 3,620 had been in DC-3 aircraft. His last CAA physical examination prior to the accident was on April 1, 1947. First Officer Balog, age 23, held an airman certificate with a commercial pilot and instrument rating, and had logged a total of 2,212 flying hours, of which 1,220 were in DC-3 type aircraft. His last CAA physical examination prior to the accident was on March 24, 1947.

The fatigue failure of an articulating rod in flight could not have been foreseen by either the flight or maintenance crews. Once the failure had occurred, the crew was faced with the possibility of both fire and damage to the wing structure as the result of severe engine vibration, and they had no alternative but to land as quickly as possible. The landing was accomplished without injury to the crew and with minimum damage to the aircraft.

Upon the basis of all available evidence, the Board determines that the probable cause of this accident was a fatigue failure of one of the articulating rods in the left engine during flight.

BY THE CIVIL AERONAUTICS BOARD:

/s/ JOSEPH J. O'CONNELL, JR.

/s/ JOHN LEE

/s/ HEROLD A. JONES

/s/ RUSSELL B. ADAMS

Ryan, Vice Chairman, did not participate.