

## CIVIL AERONAUTICS BOARD

**ACCIDENT INVESTIGATION REPORT**

Adopted: November 15, 1955

Released: November 21, 1955

NORTHWEST AIRLINES, INC., DC-3, N 45333,  
YAKIMA, WASHINGTON, JULY 15, 1955

The Accident

At 1819<sup>1/</sup> July 15, 1955, a Northwest Airlines DC-3, N 45333, operated as Flight 610 was substantially damaged when it collided with a powerline pole during an attempted go-around at Yakima Airport, Yakima, Washington. None of the 15 occupants was injured.

History of the Flight

The flight originated at Seattle, Washington, destination Spokane, Washington, with a scheduled stop at Yakima. Departure was from Seattle-Tacoma Airport at 1730 on an IFR (Instrument Flight Rules) flight plan via Green Airway 10 at 9,000 feet cruising altitude. The crew consisted of Captain Lavern R. Taylor, First Officer Homer H. Craven, Jr., Stewardess Eleanor Elaine White; there were 12 passengers. According to company records gross weight of the aircraft at the time of takeoff was 23,347 pounds and the load was properly distributed. The maximum allowable gross weight is 25,200 pounds.

At 1738 the IFR flight plan was cancelled and refiled DVFR (Defense Visual Flight Rules) direct to Yakima. The flight was advised at 1805, in its first contact with the company radio at Yakima, of some storm activity south of Yakima Airport. Three minutes later a second advisory was received reporting hard rain on the airport and wind from the south. Over Tieton, Washington, (about 20 miles north-northwest of Yakima) at 1809 the flight changed to the Yakima Control Tower frequency and received clearance for an approach to runway 22. When the aircraft was on base leg the tower advised that the wind was south 10 knots. Approach clearance to runway 16 was then requested and received and the aircraft altered its flight path accordingly. One minute out on final approach (1819) the flight was advised of a 13-knot south wind and cleared to land. At this time the storm had passed to the north of the airport and the ceiling and visibility were well above VFR minimums.

The aircraft touched down in the first quarter of the wet runway, rolled nearly 2,000 feet, and started a go-around. From a low altitude it settled to the ground just beyond the end of the runway, rolled a short distance and again became airborne. A very short distance beyond this point the right wing struck a powerline pole tearing off a portion of the wing. The aircraft continued to fly, just above the ground, across a half-mile-wide pasture and flew through a

<sup>1/</sup> All times referred to are Pacific standard and are based on the 24-hour clock.

small willow tree on the south edge of the pasture. It landed a few feet past the tree and rolled several hundred feet to a stop. All passengers left the aircraft promptly by the stair type cabin door and were then guided to a safe distance by the stewardess.

### Investigation

The change from the approach to runway 22 to runway 16 was made while the flight was far enough north of the airport to permit proper runway alignment. A number of persons observed the approach and touchdown. The majority of these stated the approach appeared to be at a normal altitude but possibly faster than usual. All agreed that there was a considerable amount of water on the hard surfaced blacktop runway at the time of the landing. Runway 16 which was 4,090 feet long, was in good condition, and relatively smooth.

The captain, who had flown the aircraft from Seattle, stated the touchdown was at an indicated airspeed of 70 knots on the wet runway approximately 1,000 feet from the approach end and that brakes were applied repeatedly with no braking effect. He said there was a "hydroplaning" effect caused, in his opinion, by the water on the runway. Hydraulic pressure was normal and brake pedal pressure felt satisfactory. Immediately after touchdown flaps were retracted and during the first portion of the landing roll the tower cleared the aircraft to the ramp. After he advised the first officer of no braking effect Captain Taylor advanced the throttles to takeoff power and a go-around was started with the aircraft becoming airborne at 70 knots indicated air speed. Further, that as the aircraft passed the south end of the runway at an altitude of approximately 25 feet and an indicated airspeed of 78 knots he ordered "gear up." Instead of raising the gear the first officer pulled both throttles back to the closed position. The captain testified that he then lowered the nose to hold air speed and re-applied full throttles. He stated that he did not land immediately after striking the powerline pole because of numerous cattle in the pasture.

It was determined that the aircraft touched down on its main gear 1,040 feet from the approach end of the runway and that a go-around was started when about three-quarters of the runway length was used. Tire marks disclosed that the aircraft settled to the ground 110 feet beyond the runway end and rolled 219 feet before again becoming airborne. Fifty-nine feet beyond this point the right wing struck a powerline pole 15 feet above the ground. The next contact was with a 10-foot-high willow tree approximately one-half mile farther south. The wheels again contacted the ground 55 feet past this tree and the aircraft came to a braked stop after rolling 575 feet.

The right outer wing and aileron were substantially damaged. There was a two-foot hole in the left side of the fuselage aft of the wing fillet. The line of wing severance extended from the leading edge, at a point 14 feet from the tip, rearward and inboard to the inboard end of the aileron. Both of the engines and the brake system were found to function in a normal manner. This condition is confirmed by testimony of the captain.

Captain Taylor testified that during most of his 12 years as a pilot for Northwest Airlines he had flown over this particular route. He also stated that he had landed at Yakima Airport on runway 16 numerous times and had executed several go-arounds from this runway; also, that the approach to runway 16 was

over high trees and powerlines and necessitated a slightly higher than normal approach. He further testified that although the 70-knot airspeed was lower than desired for the start of a go-around there was no difficulty, and he expected none, until the throttles were closed at 78 knots airspeed when he ordered "gear up."

First Officer Craven testified that he was not advised of the go-around and that the order for gear up was the only thing said by the captain after power was applied and the go-around started. In accounting for his action of pulling the throttles back his testimony was: "At the time the command was given I was expecting an order to reduce power and inasmuch as it looked like a crash was inevitable - when the order came, I moved them by spontaneous action." The first officer's left hand was resting on the control pedestal but not touching the throttles as the go-around started. He further testified that he estimated the aircraft's altitude ten feet or more above the ground when near the end of the runway and at that time he was waiting for the captain's order to reduce power and cut switches.

Since his recall to Northwest Airlines First Officer Craven had flown three round trips over the Seattle-Yakima-Spokane route with Captain Taylor. He had been furloughed in December 1953 and recalled on July 15, 1954. Mr. Craven first qualified on DC-3 equipment with Northwest Airlines in March 1952 at Minneapolis, Minnesota, and had acquired 1,200 hours on DC-3's since that time.

U. S. Weather Bureau records indicate that cumulus cloud formations began to be reported about noon, on July 15, 1955, over the Cascade Mountain range in western Washington. By late afternoon and early evening a few isolated thunderstorms were reported. These were individual storms of relatively small diameter moving rather rapidly. The surface winds accompanying the thunderstorms were variable in direction and gusty. However, due to the localized character of the storms, the winds were of short duration. The storm that passed over the Yakima Airport shortly before Flight 610 landed, traveled from the southwest to the northeast and was over the field for not more than ten minutes. The U. S. Weather Bureau at Yakima reported maximum gusts of 40 knots during the storm and no windshift was noted. The airport tetrahedron was pointing south during the entire approach and landing. This tetrahedron, although held electrically and remotely controlled, is designed to override this control and swing freely with any wind shift of 15 miles per hour or more. The U. S. Weather Bureau at Yakima Airport recorded .08 inch precipitation during the storm.

### Analysis

A local thunderstorm was over the airport a short time before Flight 610 touched down. This storm placed .08 inch of rain on the runway in a very short time but the storm had passed the airport at the time of the landing. The runways were quite wet which resulted in poor braking.

Touchdown on the first quarter of a wet runway with no resulting braking action created a definite possibility of overrun, therefore, the captain's decision to go around appears to be proper. He had made previous go-arounds on runway 16 during his twelve years of piloting for Northwest Airlines and there is no reason to doubt that this one would not have been successful had it not

been for the unexpected power interruption caused by the first officer's action of closing both throttles instead of retracting the landing gear as ordered by the captain.

Findings

On the basis of all available evidence the Board finds that:

1. The carrier, the aircraft, and the crew were currently certificated.
2. The gross weight of the aircraft was under the maximum allowable and the load was properly distributed.
3. The runway surface was wet from recent rain which prevented normal braking action.
4. The captain properly initiated a go-around to avoid a possible overrun.
5. After becoming airborne the first officer heard correctly the captain's order "gear up."
6. Instead of retracting the gear as ordered by the captain the first officer closed the throttles.
7. The power interruption caused the aircraft to momentarily settle to the ground.
8. After power was re-applied the aircraft struck a powerline pole.
9. There was no failure or malfunctioning of the aircraft or its components prior to striking the pole.

Probable Cause

The Board determines that the probable cause of this accident was the copilot's action in closing the throttles which subsequently resulted in the aircraft striking a powerline pole.

BY THE CIVIL AERONAUTICS BOARD:

/s/ ROSS RIZLEY

/s/ JOSEPH P. ADAMS

/s/ JOSH LEE

/s/ CHAN GURNEY

/s/ HARMAR D. DENNY

# S U P P L E M E N T A L   D A T A

## Special Investigation

The Civil Aeronautics Board was notified of the accident by Northwest Airlines Dispatch Office, Seattle, Washington, at 1900, July 15, 1955. An investigation was immediately initiated in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. A special investigation was ordered by the Board and depositions were taken at Seattle, Washington, on August 2, 1955, and at Yakima, Washington, on August 4, 1955.

## Air Carrier

Northwest Airlines, Inc., is incorporated in the State of Minnesota and maintains its principal place of business at Minneapolis, Minnesota. The company possesses a certificate of public convenience and necessity issued by the Civil Aeronautics Board and an air carrier operating certificate issued by the Civil Aeronautics Administration which authorizes the carriage of persons, property, and mail over the route described in this report.

## Flight Personnel

Captain Lavern R. Taylor, age 45, was employed by Northwest Airlines as a pilot in 1943. He holds a valid airman certificate with an air transport rating and type rating for DC-3 aircraft. Captain Taylor has, according to company records, a total of 7,188 pilot hours, of which 2,824 were acquired in DC-3 equipment. His last first class physical examination was passed on June 8, 1955.

First Officer Homer H. Craven, Jr., age 30, was employed by Northwest Airlines as a pilot in 1951. He holds a valid airman certificate with commercial pilot, single- and multi-engine land, instrument, and flight instructor ratings. Mr. Craven has, according to company records, a total of 3,400 pilot hours, of which 1,200 were acquired in DC-3 equipment. His last first class physical examination was passed on September 10, 1954.

Stewardess Eleanor Elaine White was employed by Northwest Airlines on December 3, 1954. Her DC-3 check rides on January 26, 1955, and March 19, 1955, were graded as satisfactory.

## The Aircraft

N 45333, a Douglas DC-3, serial number 6330, was owned by Northwest Airlines, Inc., and was manufactured on December 3, 1942. It had 27,539 flight hours when the accident occurred. The aircraft was equipped with Pratt and Whitney R-1830-92 engines and Hamilton Standard model 23E50-473 propellers. Time on both engines and both propellers since overhaul was 795 hours and 595 hours, respectively.