

CIVIL AERONAUTICS BOARD  
ACCIDENT INVESTIGATION REPORT

Adopted: January 20, 1954

Released: January 22, 1954

REGINA CARGO AIRLINES, INC. - NEAR VAIL, WASHINGTON,  
SEPTEMBER 1, 1953The Accident

A Douglas DC-3, N 19941, owned and operated by Regina Cargo Airlines, Inc., crashed 12 miles southeast of Vail, Washington (about 26 miles from McChord Air Force Base, Tacoma, Washington), between 1830 and 1900,<sup>1/</sup> September 1, 1953. The two pilots and 19 military passengers were killed. The aircraft was demolished by impact and subsequent fire; the site of the accident was the south side of a 3,000-foot timbered ridge at approximately 2,600 feet MSL.

History of the Flight

Regina Cargo Airlines, Inc., an irregular air carrier, was operating this flight as a Commercial Air Movement from Fort Ord, Monterey, California, to McChord.

The aircraft, with Captain Eugene Jones, Copilot Glenn W. Dorsett, no cabin attendant, and 19 military passengers, departed Monterey, California, at 1408, September 1, 1953, on a flight plan specifying IFR, via Airways Red 58, Blue 7, Amber 1 for McChord Air Force Base. The estimated time en route was four hours and 18 minutes with six hours and 40 minutes fuel aboard. The flight crew had been briefed on weather by Navy weather personnel at Monterey, and the flight was given ARTC traffic clearance for 500 feet on top via airways to McChord air Force Base. The trip proceeded to Portland, Oregon, in a routine manner making normal position reports and estimates of times over the next reporting points. These times closely approximated ETA's.

At Portland, at 1820, after requesting and receiving weather for Portland, Toledo, Washington, and McChord, the flight cancelled its IFR flight plan, advising that the trip would be completed VFR with an estimated time of arrival over Toledo at 1842. This was the last radio contact with the flight and there are no known witnesses to the rest of the flight or the crash. Search was started shortly after the flight became overdue at McChord. The crash was heard by a workman about a half mile away on the opposite side of a ridge at a time he estimated to be between 1830 and 1900. He did not associate this sound with an aircraft until hearing a news broadcast the next morning, when he investigated and located the wreckage.

Investigation

The flight's estimated ground speed from Portland to Toledo was 164 miles per hour, and the crash scene is 16 miles north of Toledo and about 26 miles short of the destination. A continuation of the same course at this ground speed indicates a crash time of 1848. No timepieces were recovered from the wreckage due to severity of impact and intense ground fire. The hill that

---

<sup>1/</sup> All times referred to herein are Pacific Standard, unless otherwise noted, and based on the 24-hour clock.

was struck is the highest point between Toledo and McChord Air Force Base and is approximately 3,000 MSL. The aircraft struck in level flight at approximately the 2,600-foot level on Airway Amber 1. At the time of impact the heading was 360 degrees magnetic while the airway's course is 355 degrees magnetic. Investigation revealed that both Captain Jones and Copilot Dorsett had flown over the region several times during the past few months, and that the aircraft and captain's flight kit contained aeronautical charts of the region which show elevations along the airway.

The weather was generally overcast with layers of stratus clouds with a 4,500-foot ceiling reported in the Portland area, lowering to 1,500 feet at McChord Air Force Base. Fifteen miles west of the crash, there were breaks in the overcast through which the aircraft could have descended contact. The actual 1730 weather conditions given the flight by Portland radio while over Portland were, Portland 4,800 feet measured, overcast, visibility 15 miles, altimeter 30.05 inches; Toledo 2,200 feet estimated, broken clouds, overcast at 3,500 feet, visibility 20 miles, altimeter 30.08 inches; McChord scattered clouds at 1,500 feet, overcast 3,000 feet, visibility 1-1/2 miles, very light drizzle, altimeter 30.06 inches. Temperatures were high enough to preclude wing ice formation in flight.

An Air Force pilot was flying a small civil aircraft northbound from Eugene, Oregon, about 100 miles south of Portland, to Tacoma at about the time of this accident. Actually he passed over a point about 15 miles west of the accident site at about 1800, about 45 minutes before the accident. He described the weather in the direction of the site as fog and showers on the hilltops. This pilot was well qualified and he was familiar with the terrain near McChord Air Force Base. He offered the opinion that visual flight from the crash site to McChord would not have been possible at that time. His flight was entirely visual and he was able to see the ground at all times from his altitude of about 1,000 feet MSL. However, because of the low ceiling and visibility he landed at an airport a few miles to the west of where he had intended to land, a small airport near McChord. The ground witness who heard the noise of impact described the weather at the time as rain with clouds on the trees.

There appears to have been no engine malfunctioning or fire in flight and no structural failure prior to impact, nor did the crew report any difficulty. All aircraft components were found or accounted for. The cockpit area was so extensively damaged that no instrument, including the altimeters, could be read.

Examination of the engines and propellers indicated power development and inspection of the propeller domes revealed a cruise pitch position of the blades at the time of impact. The gross weight of the aircraft at time of takeoff was 25,052 pounds; its allowable weight was 25,346 pounds. The aircraft's C. G. was located within prescribed limits. There was ample fuel aboard.

Navigation facilities consisting of low frequency ranges, which the aircraft was equipped to receive, were in normal operation. The setting of the aircraft's range receiver was about 235 kc (with the possibility of impact change); Toledo range is on 239 kc and McChord is on 272 kc.

The military had installed a fan marker (a radio navigational facility for signaling location) nine miles out on the south leg of the McChord radio range. This fan marker, known as the Hart's Lake F. M., had not been commissioned. It was not in continuous use, and therefore notice of its location and operation had not appeared on NOTAMs nor on aeronautical charts. However, it was being tested at the time of the accident, and this fact gave rise to some conjecture as to its signal possibly having been mistaken for that of another fan marker (the Lakeview F. M.) a few miles to the north. Both had the same identification signal of three dashes. Investigation of the operation and positioning of these two fan markers, together with study of a speed-distance diagram of the flight, indicated that the military fan marker was not a causative factor to this accident. Actually the crash site was well out of either aural or visual range of the military (Hart's Lake) fan marker, as proved during subsequent flight check. The CAA was to have been notified 24 hours in advance of this facility being tested. In this instance, notification was not given.

### Analysis

There appears to be no factor entering into this accident other than an attempt to fly visually at too low an altitude during instrument weather. Between Toledo, which was about 16 miles south of the crash site, and McChord, about 26 miles ahead of it, the ground on the airway is relatively low, except at the crash site. There a ridge of high land projects westward from much higher land to the east, and not only extends into the airway, but crosses it. It was close to the summit of this ridge where the airplane struck.

A logical surmise, therefore, as to just what caused the pilot to be so low is that he must have believed himself to be somewhat closer to his destination than he actually was, and was attempting to fly visually in intermittent instrument conditions. Had he been a few miles farther to the north, he could have continued level or even descending flight to McChord without encountering any obstruction. At the time that the airplane struck, it is highly likely that the hillside was entirely obscured by cloud, so that it would have been impossible to fly by visual reference. Moreover, Captain Jones did not ask for a change of flight plan back to an assigned instrument altitude which would have allowed the flight to proceed safely.

Furthermore, had the captain referred to the aeronautical charts, which were on board and readily available prior to or at the time the flight plan was changed to VFR, he would have had knowledge of the height of the terrain and any prominent elevations between Portland and Tacoma, particularly beyond Toledo. Either Captain Jones did not refer to those charts or he relied upon his knowledge of the terrain, possibly believing that he was beyond the ridge.

The 1830 weather transmitted on range frequencies at about 1845 gave McChord conditions, including the altimeter setting, about the same as at 1730. The weather was not conducive to abrupt pressure changes. There is no way of ascertaining if Captain Jones received this last information.

### Findings

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

1. The carrier, the aircraft and the crew were properly certificated.

2. The aircraft was loaded to a weight less than its maximum allowable and its center of gravity was located within prescribed limits.

3. The aircraft was airworthy.

4. All ground radio facilities were functioning normally.

5. An instrument flight plan had been cancelled and the flight was proceeding in accordance with visual flight rules.

6. The crash occurred during daylight on a fog-covered hillside at an altitude of about 2,600 feet MSL.

7. The crash site was on the airway and the direction of impact was near the on-course heading.

Probable Cause

The Board finds that the probable cause of this accident was the pilot's attempt to continue flight under the provisions of Visual Flight Rules during instrument conditions.

BY THE CIVIL AERONAUTICS BOARD:

/s/ CHAN GURNEY

/s/ HARMAR D. DENNY

/s/ OSWALD RYAN

/s/ JOSH LEE

/s/ JOSEPH P. ADAMS

## S U P P L E M E N T A L   D A T A

### Investigation and Hearing

The Civil Aeronautics Board was notified of this accident at 1000 September 2, 1953. 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 public hearing, ordered by the Board, was held in Seattle, Washington, on October 9, 1953. Depositions were taken from three persons prior to the hearing.

### Air Carrier

Regina Cargo Airlines, Inc., was a New York corporation with its operating base at Miami International Airport, Miami, Florida. The company was engaged in the transportation of persons and property under a letter of registration (#1655) issued by the Civil Aeronautics Board, and an air carrier operating certificate (2-478) issued by the Civil Aeronautics Administration.

### Flight Personnel

Captain Eugene Jones, age 42, was employed by Regina Cargo Airlines, Inc., on February 27, 1953. He was the holder of a valid airline transport pilot certificate #10209 with DC-3 type rating. Captain Jones had a total of 3,935 flying hours, of which more than 1,000 hours were on DC-3 equipment, and 106 hours of instrument time. His last instrument check was accomplished on July 12, 1953. He passed a CAA physical examination on April 1, 1953.

Copilot Glen William Dorsett, age 32, was employed by Regina Cargo Airlines, Inc., on April 15, 1953. He was the holder of a valid airman certificate, #465016, with commercial pilot and instrument ratings. He had a total of 2,085 flying hours, of which more than 500 hours were on DC-3 equipment, and approximately 184 hours of instrument time. His last instrument check was on April 15, 1953, and his last CAA physical examination was accomplished on May 23, 1953.

### The Aircraft

N 19941, a Douglas DC-3, Serial #6333, was owned and operated by Regina Cargo Airlines, Inc. It had a total of nearly 8,398 flying hours, and was currently certificated by the Civil Aeronautics Administration. The aircraft was equipped with two Wright R1820-G202A 1200 hp. engines and Hamilton Standard model 23E50 hydromatic propellers. The aircraft underwent a No. 4 (heavy) inspection at Miami, Florida, on August 29, 1953, and had operated less than 35 hours since that check.