

## CIVIL AERONAUTICS BOARD

## ACCIDENT INVESTIGATION REPORT

Adopted: March 29, 1950

Released: March 30, 1950

## HARRINGTON'S, INC., NEAR AKRON, OHIO, NOVEMBER 4, 1949

## The Accident

At approximately 2134,<sup>1</sup> November 4, 1949, a DC-3 aircraft, NC-29086, owned and operated by Harrington's, Inc., crashed 3,250 feet south of Runway 36 of the Akron-Canton Airport, Akron, Ohio. The crew of three, the only occupants, were killed. The aircraft was destroyed.

## History of the Flight

The aircraft departed from the North Philadelphia Airport, Philadelphia, Pennsylvania, at 1846, November 4, 1949, for Cleveland, Ohio, with a flight crew consisting of James R. Harrington, pilot; John E. Franklin, copilot; and Robert S. Yarano, crew chief. Prior to takeoff the pilot checked the en route weather, including the terminal forecasts for Cleveland and Akron, however, none of the crew was briefed by the U. S. Weather Bureau. A flight plan was then filed with Philadelphia ATC<sup>2</sup> which specified that the flight proceed from Philadelphia to Allentown according to Visual Flight Rules, and from Allentown to Cleveland according to Instrument Flight Rules at a cruising altitude of 4,000 feet. Mansfield, Ohio, was designated as the alternate airport. At the time of takeoff, the aircraft carried 3,000 pounds of fuel and 4,878 pounds of cargo, total aircraft weight was 24,800 pounds which was within the allowable limit, and the load was so distributed that the aircraft's center of gravity was within the certificated limits.

The flight was routine until it reported over Youngstown, Ohio, at 2100, at which time a new flight plan was filed with Cleveland ATC because the Cleveland weather was below the authorized landing minimums and also because freezing rain was forecast at the time of the flight's

arrival. The destination was changed to Akron, and Toledo, Ohio, was designated as the alternate.

At 2114 the flight reported to the Akron-Canton Tower estimating arrival over the Akron Range Station at 2117 at 4,500 feet and the tower issued approach clearance. At 2118 the flight reported over the Akron Range Station. Five minutes later, at 2123, the flight reported outbound at 2,500 feet over the outer marker, 4.3 miles south of Runway 36. The tower, at 2128, transmitted to the flight the 2125 Akron-Canton weather as follows:

"CAK Special #31, 2125F observation, ceiling measured 4,000 overcast, scattered clouds at 700, visibility 1, light snow, fog, smoke, wind NW 4, temperature 32, dew point 32, altimeter 29.96, and remarks scattered clouds variable to broken."

At 2132, the flight reported inbound at 2,500 feet over the outer marker and was cleared to land on Runway 36. This was the last radio contact with the flight. Approximately two minutes later the aircraft crashed south of the airport.

## Investigation

The wreckage was found in a wooded area, 3,250 feet south of Runway 36 and approximately 880 feet east of the center line of the runway. The first point of impact was made with the tops of trees at an altitude of approximately 70 feet. The marks on the trees indicated that at impact the wings were laterally level and that the angle of descent through the trees was approximately 20 degrees. The aircraft struck on a magnetic heading of approximately 10 degrees and continued in a straight line, coming to rest in an inverted position approximately 450 feet from the initial point of impact. A 25-foot section of the outer right wing had been sheared off by contact with trees.

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

<sup>2</sup> Air Route Traffic Control

and was found approximately 250 feet south of the main wreckage. The left wing was still attached to the fuselage but was completely shattered due to impact with several trees. The lower portion of the fuselage nose section, including the cockpit, was severely crushed. The remainder of the fuselage, although twisted and buckled, retained its configuration. The vertical fin with the rudder still attached had separated from the tail section, being connected only by a trim tab control cable.

The landing gear was found in the extended and locked position. Due to the extent of the damage to both wings, the position of the flaps prior to impact could not be determined. The settings of the cockpit controls and readings of the instruments were not considered indicative of their positions or readings before impact because of the destruction of the cockpit. Only one altimeter could be read, its barometric pressure setting was 29.88 inches.

No radio range facility exists for a Standard Instrument Approach to the Akron-Canton Airport and all instrument approaches are accomplished either by the ILS<sup>3</sup> or by using an ADF<sup>4</sup> type approach. The aircraft had radio equipment for either type of approach.

An examination of the aircraft radio equipment was made, and no evidence was found that indicated it was not capable of normal operation immediately prior to the accident. The control switch of the pilot's ILS control box was found in the "on" position, indicating that both the localizer and glide path were being utilized. The channel selector switch was found set on the Akron-Canton ILS assigned channel. All other radio equipment was found set in a position that indicated the pilot was utilizing all radio aids for the intended landing at the Akron-Canton Airport.

Both engines were torn loose from the aircraft at the fire wall attachments and rolled forward of the main wreckage. An examination of the engines and the accessory sections revealed no evidence of any mechanical malfunctioning. As a result of impact with the trees, the blades of both propellers were severely bent and twisted. An examination of the marks made by the propeller blades on the trees

indicated that at the time of impact considerable power was being developed by both engines. The propeller hub gearings were found broken with the blades in the low pitch operating range. Both propellers had torn free from the engines with the reduction gearing and nose sections still attached. The aircraft was not equipped with wing deicing equipment. However, an examination of the aircraft immediately following the accident revealed no evidence of aircraft ice.

Following the accident the Operations Manual, aircraft and engine log books, airworthiness certificate, and registration certificate were recovered and found to be in order.

Several flights, within two hours of the accident, had accomplished instrument approaches at the Akron-Canton Airport using the ILS. None of these flights reported any malfunctioning of the ground units of the ILS. Two hours following the accident all of the ILS components and tower communication equipment were ground checked and were found to be operating normally. The following day the ground units of the ILS were flight checked and were found to be operating normally.

A review of the weather data indicates that the flight received adequate and accurate weather information both before takeoff and while en route. The weather was substantially as forecast. At the time of the accident, the weather at the Akron-Canton Airport was reported to be a measured 4,000-foot ceiling with scattered clouds at 700 feet, the wind was from the northwest at four miles per hour, and visibility was restricted to one mile by light snow, fog and smoke. Although a light wet snow was falling, surface icing conditions were indicated to be negligible to light. Pilot reports also indicated little or no surface icing.

### Analysis

There was no evidence which indicated any malfunctioning of either the engines or the aircraft. Furthermore, all radio transmissions from the flight, including the last, two minutes before the accident, were routine which would indicate that the flight was not experiencing any difficulties.

The possibility of the malfunctioning of the ILS equipment was thoroughly investigated since this could contribute to an aircraft being flown at an altitude

<sup>3</sup> Instrument Landing System

<sup>4</sup> Automatic Direction Finder

too low to clear the terrain. However, as previously mentioned pilot reports, a ground check, and a flight check indicated that the ground units of the ILS were operating normally at the time of the accident and when checked following the accident. Also the examination of all the components of the aircraft's radio equipment indicated that it was capable of normal operation. Therefore, the possibility that the accident occurred because of the malfunctioning of either the ground or airborne radio equipment does not appear reasonable.

One altimeter was found relatively undamaged and its barometric pressure setting was 29.88 inches. The barometric pressure setting at the field was 29.96 inches. Therefore the aircraft would be higher by about 80 feet than its altimeter would indicate if the altimeter had been set at a barometric pressure of 29.88 inches. For this reason, an erroneous altimeter setting cannot be considered as contributing to the accident.

The flight was given adequate and accurate weather information just prior to the accident. The weather was above ILS landing minimums, therefore, the flights should have experienced no difficulty in accomplishing an instrument approach.

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## Findings

1 The aircraft, carrier and crew were properly certificated.

2 There was no evidence of mechanical malfunctioning of the aircraft immediately prior to the accident.

3 Airborne and ground radio facilities were operating normally at the time of the accident.

4 At the time of the accident the weather was above authorized minimums for ceiling and visibility.

5 The aircraft crashed 3,250 feet south of the runway and 880 feet east of the center line.

## Probable Cause

The Board determines that the probable cause of this accident was the improper execution of an instrument approach which resulted in the aircraft being flown to the right of the proper approach path at an altitude too low to clear the terrain.

BY THE CIVIL AERONAUTICS BOARD

/s/ JOSEPH J O'CONNELL, JR

/s/ OSWALD RYAN

/s/ JOSH LEE

/s/ HAROLD A JONES

/s/ RUSSELL B ADAMS

## Supplemental Data

### Investigation and Hearing

The Civil Aeronautics Board received notification of the accident at 0100 EST, November 5, 1949, by CAA Communications System and immediately initiated an investigation in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. As part of the investigation the hearing was held November 17, 1949, at Akron, Ohio

### Air Carrier

Harrington's, Inc , is an Ohio Corporation with its principal place of business located in Cleveland, Ohio. At the time of the accident the company held an air carrier operating certificate issued by the Civil Aeronautics Administration, No 3-460 It also held a letter of registration as a Large Irregular Carrier, No. 1737, issued by the Civil Aeronautics Board April 30, 1948 The company was authorized to carry passengers and cargo within the continental limits of the United States

### Flight Personnel

James R Harrington, pilot, age 46, held a valid airman certificate with an airline transport pilot rating He had logged approximately 5,000 hours, of which approximately 600 hours had been obtained in multi-engine aircraft and

275 hours were logged as instrument time Harrington's last first-class physical was accomplished June 3, 1949, and his medical certificate carried the following limitations: "Limited vision both eyes 20/30 without correction—corrected to 20/15, both eyes. Corrected lenses shall be worn while operating the aircraft " Although it could not be determined if Harrington was wearing glasses at the time of the accident, his broken glasses were found in the wreckage close to his body

John E Franklin, copilot, held a valid commercial certificate with a multi-engine and flight instrument rating and had accumulated approximately 2,300 hours

### The Aircraft

NC-29086, a Douglas DC-3, was manufactured April 1942, was currently certificated by the Civil Aeronautics Administration, and at the time of the accident had been flown a total of 1,965 hours It was equipped with two Pratt and Whitney R-1830 engines and two Hamilton Standard propellers. The left engine and propeller had a total of 872 hours since new, and the right engine and propeller 600 hours since new. The last 100-hour check on the aircraft had been accomplished at approximately 1,860 hours