

## CIVIL AERONAUTICS BOARD

## ACCIDENT INVESTIGATION REPORT

Adopted: June 1, 1950

Released: June 5, 1950

METEOR AIR TRANSPORT, INC., NEAR DETROIT CITY AIRPORT,  
DETROIT, MICHIGAN, NOVEMBER 19, 1949

## The Accident

Aircraft NC-54337, a DC-3, operated by Meteor Air Transport, Inc., an irregular air carrier, crashed 3,200 feet east of the Detroit City Airport, Detroit, Mich., at approximately 1011,<sup>1</sup> November 19, 1949. Both members of the crew received fatal injuries. The aircraft crashed into a house in a residential district adjacent to the airport killing one occupant of the house and seriously injuring another.

## History of the Flight

Meteor Air Transport's Trip W-959, a cargo flight, departed Teterboro, N. J., at 2338, November 18, 1949, on an IFR flight plan for Detroit, Mich., with a refueling stop scheduled at Dunkirk, N. Y. The crew consisted of Arthur A. Dede, pilot, and Gus F. Morrow, copilot.

Due to snow conditions the flight was delayed at Dunkirk for several hours. During this time the crew obtained weather information and had the aircraft serviced with 230 gallons of fuel. Two ground attempts to take off from Dunkirk were made, at 0215, and at 0405 but these were discontinued after a short take-off run because of the accumulation of snow on the aircraft. This snow had accumulated during the time the aircraft was on the ground. A special weather forecast requested from New York and delivered to the crew at 0355, predicted that between Dunkirk and Detroit ceilings would be 3,000 to 4,000 feet MSL, visibility seven miles or more, and that there would be icing in the clouds. At 0808, Captain Dede filed with Cleveland Air Route Traffic Control an IFR flight plan which described a route to Detroit by way of Clear Creek, Canada, at an altitude of 4,000 feet, with Cleveland, Ohio, being designated as the alternate airport. Twenty-

nine minutes later, at 0837, the flight took off from Dunkirk. There was sufficient fuel aboard to fly three hours and 40 minutes, and the computed elapsed time to Detroit was one hour and 50 minutes. At this time the total gross weight of the aircraft was 27,050 pounds which was 150 pounds above the allowable limit.

Routine progress reports were made by the flight when over Clear Creek and Windsor, Canada, and at 0954, Detroit Air Route Traffic Control cleared the flight to contact Detroit City Airport Approach Control. Instructions were given the flight by Approach Control and Runway 25 was designated as the runway in use. The flight was also advised that the visibility, restricted by snow showers and smoke, was one mile, and that the surface wind was 15 miles per hour from the southwest.

The Detroit City Airport tower controller first observed the aircraft one mile east southeast of the airport with its landing gear down, flying on an approximate heading of 300 degrees and at an altitude estimated to be 700 feet above the ground. When the flight was almost over the field, it requested permission to make a left circle of the airport before landing. Clearance to do this was granted and again the flight was instructed to land on Runway 25. The flight passed directly over the airport, turned left and then flew on an easterly heading until it was approximately three-quarters of a mile east of the approach end of the runway. Here it was seen to make a steep left turn and change direction approximately 180 degrees. Although the aircraft straightened out from this turn, it continued to lose altitude until it struck the chimney of a house in a residential district of Detroit approximately 3,200 feet east of the airport. The aircraft then struck and demolished a second house approximately 45 feet west of the first house. Fire developed which partially destroyed the aircraft.

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

## Investigation

First contact was made by the left horizontal stabilizer of the aircraft and the brick chimney of the first house. The chimney was razed and the left horizontal stabilizer and the left elevator were torn free from the aircraft and fell to the ground. From markings on the roof of the first house and a nearby tree, it was determined that the empennage of the aircraft scraped across the roof top, but due to the roof's slant of approximately 22 degrees, the right horizontal stabilizer and the right elevator were not damaged. The second dwelling was leveled to its foundation. The aircraft was found in the debris with its nose facing south.

Fire and impact forces destroyed the fuselage from the nose rearward to the front center section spar. The remainder of the fuselage was virtually intact except for large tears in the upper skin near the empennage group and on the bottom surface of the empennage. It was established that the landing gear, although damaged, was extended and locked.

The left wing was bent upward at its tip and was resting on the ground. A portion of the leading edge of the left wing, from the fuselage end to the landing light, was torn and compressed in a rearward direction. The deicer boot was damaged in this area. The right wing which was not equipped with a deicer boot was only slightly damaged. Both flaps were found in the full up position.

The left horizontal stabilizer and the left elevator, which were torn from the aircraft upon impact with the chimney, were badly damaged. Deep scratches and soot were found on the bottom surface of the stabilizer, and pieces of brick had penetrated its upper surface. The right horizontal stabilizer, the right elevator and the vertical fin were undamaged. The right and left horizontal stabilizers were equipped with deicer boots, however, the vertical fin was not so equipped. The fact that the deicing equipment was not completely installed and was inoperative did not affect the aircraft's airworthiness.

Impact forces separated the left engine and partially separated the right engine from the wing. The propellers and their respective shafts and reduction gears parted from the engines and were found close by. Examination of the

propeller dome settings and propeller blades showed that both engines were operating at approximately the same power setting and were producing some power at the time of impact.

There was no evidence of structural failure or malfunctioning of the aircraft or engines prior to the accident.

An aftercast of the weather on the evening of November 18, 1949, indicated the presence of a low pressure area off the New England coast and another low pressure area in southern Canada to the north of North Dakota and Minnesota. A large high pressure area lay over the Gulf states and the Gulf of Mexico and from this a ridge of high pressure extended across the eastern portion of the Great Lakes and Canada. From the low pressure area in Canada a warm front extended in a southwest direction across Minnesota, Nebraska and northwestern Kansas. No fronts existed along the route between Teterboro and Detroit; however, icing conditions were indicated in the clouds.

As stated, the flight was delayed at Dunkirk several hours because of snow and ice on the aircraft. Before departure from Dunkirk, at 0837, the crew obtained a weather forecast from FAWS<sup>2</sup> at New York, N. Y., which indicated a ceiling along the route of 3,000 to 4,000 feet and occasional light snow showers in the vicinity of Detroit. This forecast further indicated icing in the clouds, however, reports from other pilots flying in this area about this time indicated that there was little or no icing below 6,000 feet. At the time the flight approached Detroit the reported weather was ceiling 5,000 feet and visibility one mile with light snow showers and smoke.

The flight was observed to fly over the Detroit City Airport at an estimated altitude of 700 feet above the ground, to execute a left turn and to fly in an easterly direction. Observers in the control tower stated that the pilot flew an unusually close pattern instead of making the normal wide circle around the airport, and when on the downwind leg disappeared from their view in an easterly direction. The aircraft was seen by witnesses about a mile east of the airport making a steep left turn from which

<sup>2</sup> Flight Advisory Weather Service

it recovered and then settled to the ground in a nose high attitude.

An examination of the company's weight and balance manifest for NC-54337, dated November 18, 1949, disclosed that errors had been made in computing the gross weight of the aircraft, and that when NC-54337 departed Teterboro, it actually carried 339 pounds in excess of the allowable gross weight of 26,900 pounds. However, the disposable load was properly distributed so that the center of gravity of the aircraft was within the certificated limits. The gross weight of the aircraft on departure from Dunkirk was also computed and found to have been 150 pounds in excess of its allowable limit.

An examination of the company's maintenance records showed that the aircraft was in an airworthy condition prior to the departure from Teterboro.

### Analysis

Although the deicing equipment was incompletely installed and was inoperative, the flight was made to Detroit when known icing conditions existed along the route.<sup>3</sup> Weather sequences and forecasts clearly depicting these conditions were available to the crew before departing Teterboro and were actually received before departing. However, as icing conditions were not reported below 6,000 feet in the vicinity of Detroit by the crew of NC-54337, by the U. S. Weather Bureau, or by other pilots, it is believed that ice on the aircraft did not cause this accident. It was determined that the aircraft was overweight by 150 pounds when departing Dunkirk, however, fuel consumed during the elapsed flying time of one hour and 34 minutes between Dunkirk and Detroit decreased the weight of the aircraft so that on arrival at Detroit it was within the certificated limit.

From the evidence it appears that Captain Dede, in flying around the airport, flew such a close-in approach pattern that it was necessary at the conclusion of the downwind leg to make a steep turn

<sup>3</sup>Civil Air Regulations Section 42.54, Flight into known icing conditions. No aircraft shall be flown into known or probable heavy icing conditions. Aircraft may be flown into light or moderate icing conditions only if the aircraft is equipped with an approved means for deicing the wings, propellers, and such other parts of the aircraft as are essential to safety.

to align the aircraft with the runway in use. It is probable that because of reduced visibility, due to the reported snow showers and smoke, the pilot shortened the radius of all turns to keep the airport in sight.

It appears that a steep turn to final approach was made at an estimated altitude of 700 feet with the flaps retracted and the landing gear extended, and that the steep angle of the turn so reduced flying speed that the aircraft settled to the ground.

### Findings

1. The carrier, the aircraft and the crew were properly certificated.
2. The aircraft was only partially equipped with deicer boots which were inoperative.
3. Icing conditions existed in the clouds along the route between Teterboro and Detroit at the time the flight was made, however, ice is not considered a contributing factor in this accident.
4. Although the aircraft was overweight when departing Teterboro and Dunkirk, its gross weight was within the allowable limit on arrival at Detroit.
5. The pilot executed a close-in approach pattern in circling the Detroit City Airport and a steep turn at an approximate altitude of 700 feet when turning to final approach.
6. Air speed was lost during the turn which caused the aircraft to partially stall and settle to the ground.

### Probable Cause

The Board determines that the probable cause of this accident was the pilot's action in making a steep turn on final approach without at the same time maintaining adequate air speed, causing the aircraft to settle to the ground.

BY THE CIVIL AERONAUTICS BOARD

/s/ JOSEPH J. O'CONNELL, JR  
 /s/ OSWALD RYAN  
 /s/ JOSH LEE  
 /s/ RUSSELL B ADAMS

Harold A. Jones, Member of the Board, did not participate in the adoption of this report.

# Supplemental Data

## Investigation and Hearing

The Civil Aeronautics Board received notification of the accident on November 19, 1949, at 1050, by telephone from CAA Communications, Chicago, Ill. Investigators from the Board's Chicago office proceeded to the scene of the accident and 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 was ordered by the Board and was held in Detroit, Mich., December 1, 1949.

## Air Carrier

Meteor Air Transport, Inc., is incorporated in the State of Delaware and maintains headquarters in Teterboro, N. J. Meteor Air Transport, Inc., possessed a Letter of Registration as an irregular carrier, and an air carrier operating certificate which authorized the air carriage of persons and property between the points described in this report.

## Flight Personnel

Captain Arthur Dede, age 24, was employed by the company on December 5,

1947. He had a total of 1,957 flying hours, of which 1,500 were in DC-3 type aircraft. He held a valid airman certificate with commercial pilot, single and multi-engine and instrument ratings. He successfully passed his last CAA physical examination August 16, 1949. Copilot Gus. F. Morrow, age 31, was employed by the company as copilot on October 18, 1949. He had a total of 1,589 flying hours. He held a valid airman certificate with a commercial pilot, single and multi-engine and instrument ratings. He successfully passed his last CAA physical examination on June 6, 1949.

## The Aircraft

NC-54337, a Douglas DC-3 type aircraft, had a total of 3,416 flying hours and was currently certificated by the Civil Aeronautics Administration. It was purchased by Meteor Air Transport, Inc., December 8, 1947. It was equipped with two Pratt and Whitney Model R-1830 engines and Hamilton Standard hydromatic constant speed propellers.