

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: March 19, 1946Released: March 20, 1946

PENNSYLVANIA-CENTRAL AIRLINES - MORGANTOWN, WEST VIRGINIA, APRIL 14, 1945

I. The Accident:

Pennsylvania-Central Airlines' Flight 142 en route from Pittsburgh to Birmingham crashed against the west slope of Cheat Mountain seven miles east-northeast of Morgantown, West Virginia, about 1700 EWT^{1/}, on April 14, 1945. All 17 passengers and three crew members were fatally injured and the Douglas DC-3 was destroyed by impact and fire.

II. Description of the Flight:

Captain Harold Houston Jones, PCA pilot and captain of Flight 142, contacted the Flight Advisory Service of the CAA at Pittsburgh about 1350, April 14, 1945, to check the weather between Pittsburgh and Birmingham. He specifically asked the opinion of the Flight Advisory Meteorologist as to whether he should pass up Morgantown, West Virginia, a scheduled stop at which landings were authorized only if the weather was above the minimums of 1000 foot ceiling and one mile visibility. He was informed by the forecaster that a cold front was in the vicinity of Morgantown and that the present ceiling of 2500 feet would lower to below the minimums behind the front. The forecaster pointed out that ceilings behind the front had been below 1000 feet and that there would be little reason to expect otherwise at Morgantown. The record indicates that Captain Jones read the route

^{1/} All time referred to in this report is Eastern War and based on the 24-hour clock.

forecast prepared by the Flight Advisory Service which predicted zero ceilings in the higher terrain behind the front, otherwise 200 to 500 feet stratus clouds, improving to 700 to 1000 feet three to four hours after the frontal passage.

Captain Jones and First Officer William Thomas Repack discussed the weather situation and prepared the flight plan for the trip using, in addition to the Flight Advisory forecast,^{2/} the PCA forecast. This latter forecast predicted for Morgantown 4000 feet overcast, but with a lower broken to overcast layer at 600 to 800 feet, visibility variable one half to two miles, rain and showers. The above conditions were to prevail until 2200 at which time they would improve with broken ceilings of 1000 to 1200 feet. It contained, in addition, a general statement to the effect that conditions north of the front would include a broken ceiling 2000 to 2500 feet above mean sea level.

The most optimistic weather forecast available was prepared by the Weather Bureau station in Washington and contained a terminal forecast for Morgantown of 1500 feet overcast and 2 miles visibility after the frontal passage which was forecast at approximately 1430. The sequence reports for Morgantown had been consistently reporting lowering ceilings until by the time of take-off, Morgantown reported 1200 feet and 2 miles

The investigation disclosed that the company's dispatcher at Washington was unaware of the existence of the Flight Advisory Service which had been established at Pittsburgh and at many other points throughout the country sometime previously for the express purpose of providing detailed and current weather information to pilots for the particular routes they were to fly. Although this was not directly pertinent to this accident it did indicate a lack of understanding among the various operating personnel concerned as to all of the facilities available in the planning of a flight.

which closely approached the minimum conditions for landing. The dew point at Morgantown reported in the 1530 sequence, which was the last such report to be read by Captain Jones, was one degree below the station temperature.

Captain Jones submitted to the PCA chief dispatcher at Washington, D. C., the flight plan calling for a cruising altitude to Morgantown of 2500 feet. After receiving approval of the dispatcher the flight plan was submitted to the Pittsburgh Airway Traffic Control Center and an instrument clearance granted approving the cruising altitude of 2500 feet.

Morgantown was served only by a 50 watt radio homing beacon which was inoperative at the time of the flight due to failure of the power supply. This beacon was not a required facility since instrument approaches were not authorized at Morgantown. Furthermore, the pilot was advised before take-off and again in flight that the facility was inoperative. The airport at Morgantown is located 50 miles south of Pittsburgh and approximately one mile east of Morgantown. Morgantown is situated on the Mononghela River which flows northward to Pittsburgh and which provides a navigational reference for contact operation.

Flight 142 departed Pittsburgh at 1641, 41 minutes late, due to the delayed arrival of a connecting flight. Eight minutes after take-off the pilot was given the 1630 Morgantown weather: Ceiling 1200 feet, visibility 2 miles, light fog. Approximately two minutes later the flight reported its position as over South Brownsville, approximately 27 miles north of Morgantown, at 2500 feet sea level. The pilot at this time was informed of a special Morgantown weather report which indicated a ceiling of 1000 feet and visibility of 1 mile. He was also informed that the Morgantown

weather was at the minimum and that it "is OK if Jones wants to go in. If he doesn't think it looks good, tell him to proceed on to Clarksburg." The captain acknowledged the message and replied that he would "take a look" and advise. Then at 1656, 15 minutes after take-off, the pilot was given the Morgantown weather and local traffic information. This was the last contact with the flight.

Beyond South Brownsville the aircraft encountered a continually lowering ceiling and proceeded at or through the irregular base of the cloud deck. Several witnesses observed the aircraft alternately in and out of the ragged overcast over a distance of approximately 20 miles and over the higher terrain east of the regular course. At 1658 the aircraft crashed near the top of a ridge on the west side of Cheat Mountain at an elevation of about 2100 feet and approximately seven miles east-northeast of the Morgantown Airport. When the airplane crashed it was seven miles off course and two miles off the airway.

Severed tree tops indicated that the plane was in a descent of about 330 feet per minute and was banked slightly to the right at the moment of impact. The aircraft continued through the trees and underbrush, its wings and engine nacelles disintegrating progressively. Its first contact with the ground occurred approximately 160 feet beyond the point of initial impact with the trees, following which the aircraft skidded up the sloping terrain for an additional 240 feet. It burst into flames which consumed most of the fuselage including the cabin and the pilots' compartment.

A search was initiated when it was determined that the aircraft was definitely overdue and after repeated attempts to contact it by radio had failed. The wreckage was first sighted from the air about 1045 the following day.

III. The Investigation:

The examination of the wreckage was rendered difficult due to the fact that the major portion of the aircraft was consumed by fire or damaged beyond the possibility of accurate analysis. However, it was determined that both engines were delivering power at the time of impact and that the propellers were set within cruising pitch limits. The landing gear and flaps were retracted. Two radio receivers were found to have been tuned to the Pittsburgh Range. All records normally contained within the aircraft including the flight plan and flight log were destroyed in the impact and subsequent fire.

During the morning of April 14, 1945, a high pressure cell of polar continental air was centered over eastern North Dakota moving in an easterly direction at approximately 10 - 15 mph. A cold front was projected through southern Ohio, across Pennsylvania and into New England, the polar continental air mass underrunning a tropical maritime air mass. The front moved southeastward during the day and passed Morgantown approximately two and a half hours before Flight 142 departed Pittsburgh. The winds behind the front were northerly and the cold air mass was generally stable. Inasmuch as considerable moisture prevailed over the area, the temperature-dew point spread of the cold air was very narrow and the lifting caused by the terrain was sufficient to produce light fog and low ceilings with light rain behind the front. With relatively light winds present, the situation was destined to persist over a period of several hours after the passage of the front, and did, in fact, last until well into the following morning.

Testimony by PCA personnel indicated that the station policy at Pittsburgh had been to retain copies of the flight plan and flight release only until midnight of the day in which the flight originated which was contrary to the Civil Air Regulations.^{3/} The flight release duplicate of trip 142 was discarded after the flight, and inasmuch as the original was destroyed in the crash, no record was available for investigation other than the Washington dispatcher's authorization for the flight.

The record indicates that Jones had held the status of Captain with the company since November 1942 and that while he had only recently been assigned to the Pittsburgh-Birmingham route, of which Pittsburgh-Morgantown is one section, he had, nevertheless, qualified in accordance with the route competency provisions of the Civil Air Regulations and had flown some regular trips as Captain. Repack had served on this route as First Officer for approximately 11 months.

CAR 61.7103 Clearance and preparation. A clearance form shall be properly prepared for each flight between specified clearance points. Such form shall be signed by the first pilot and by the authorized aircraft dispatcher or, by duly authorized station personnel of the air carrier after receiving current authority from the authorized aircraft dispatcher, only when the first pilot and the dispatcher both believe the flight may be made with safety. A load manifest form shall be properly prepared and signed for each flight by the personnel of the air carrier who are charged with the duty of supervising the loading of the aircraft and the preparation of the load manifest forms. The aircraft when loaded as shown on the load manifest form shall not exceed the center of gravity limits or maximum allowable weight limits set forth in the aircraft certificate for the particular aircraft. The original copies of both forms shall be given to the first pilot and duplicate copies shall be kept in the station file for a period of at least 30 days.

IV. Discussion:

No evidence has been found of any materiel malfunction which may have contributed to the accident by necessitating a course of action which the conditions of weather and terrain rendered hazardous. Statements of witnesses, inspection of maintenance records and what evidence the records disclosed could lead only to the conclusion that there was no equipment failure.

It is apparent that the weather situation was observed by the pilot over a period of approximately three hours prior to the accident and that there was available considerable information concerning the conditions at Morgantown throughout that period. The general trend of the weather was clearly towards below minimum conditions at Morgantown at the estimated time of arrival, indicating that there would be little likelihood of being able to make a landing under contact flight rule conditions from the proposed flight altitude of 2500 feet.

The altitude of 2500 feet obviously was chosen by Captain Jones so as to permit the flight to remain below the overcast if possible since a Morgantown landing is permitted only under contact flight rules. If contact flight became impossible at any time during the flight the proper procedure would have been to climb to at least the minimum authorized instrument altitude and proceed in accordance with instrument flight rules, obtaining a new clearance from Airway Traffic Control. Although the minimum altitude for actual instrument flight from Pittsburgh to Morgantown as specified in the carrier's operations manual and sanctioned by the Air Carrier Division of the Civil Aeronautics Administration was 2300 feet, the altitude of 2500 feet submitted by Captain Jones was approved under an

"instrument clearance" by the Airway Traffic Control Center of the Civil Aeronautics Administration in accordance with their practice of approving requested altitudes solely on the basis of other known traffic and without responsibility for terrain clearance, weather conditions, etc. These other factors are covered in the Civil Air Regulations and in the company's operations manual which is submitted to and reviewed by the Administrator. The pilot presumably was thoroughly familiar with all of these required procedures. 4

Civil Air Regulations

Section 61.71080(a) Weather minimums; visual-contact clearance. The hourly weather report sequence and current weather forecasts shall show a trend that gives sufficient indication that the ceilings and visibilities along the route to be flown are and will remain at or above the minimums specified in the air carrier operating certificate until the flight arrives at the point cleared to.

Section 61.741 Instrument flights. Altitudes established for instrument flights by the provisions of section 60.58 (subsequently amended) shall be strictly adhered to during such flights. Except during take-offs, and final approaches and landings, no instrument flight shall be conducted within 1000 feet above the ground or any obstruction.

Company's Operations Manual

Flight Releases--Types and Conditions.

B. Instrument Release.

1. An instrument Release is considered the normal type of Release and will generally be used for all trips regardless of whether it will be flown contact or on instruments unless there is cause to prevent the issuance thereof

2. Weather conditions must be equal to or better than the minimum prescribed in CAR 60 and 61 and in the Competency Section of this Manual for the types of operation to be conducted.

Route Data. Pittsburgh-Birmingham.

C. Minimum Altitudes, Pittsburgh-Morgantown.

Day Contact - 1800 feet.
Night Contact - 2300 feet.
Instrument, Northbound - 3000 feet.
Instrument, Southbound - 3300 feet.

In reconstructing the flight it is clear that it was intermittently on instruments between South Brownsville and Morgantown and without question the pilot should have abandoned his attempt to land at Morgantown. Furthermore, in view of his presumed knowledge of the weather he should have been fully prepared for just such a contingency. It seems apparent, however, that he avoided climbing to the prescribed instrument altitude of 3300 feet in the belief that he would be able to locate the Morgantown Airport by visual reference. It is not possible to determine exactly why he was off course although it is entirely possible that he mistook the Cheat River for the Monongahela River and was not able to correct his error in the poor visibility before crashing against Cheat Mountain. It is clear, however, that whatever may have been the cause for his departure from the course the accident resulted from the fact that the pilot at the time was where he had no right to be under the existing weather conditions and applicable safety regulations.

V. Findings:

Upon the basis of available evidence, the Board finds that:

1. The company, aircraft, and crew were properly certificated for the subject flight.
2. There was no evidence of equipment failure prior to the crash.
3. The major portion of the weather data available for the flight strongly indicated the likelihood of below minimum conditions prevailing at Morgantown.

4. For reasons undetermined the flight was approximately seven miles east of the proper course and two miles off the airway at the time of the crash.

5. In the latter part of the flight the pilot encountered intermittent instrument weather conditions and failed thereupon to climb promptly, in accordance with established company and government procedure, to an instrument altitude which would provide a margin of safety over the adjacent terrain.

6. While being thus flown in instrument weather at an altitude below the authorized safe minimum altitude for instrument flight, the airplane crashed into the west slope of Cheat Mountain.

VI, Probable Cause:

On the basis of the foregoing the Board determines that the probable cause of this accident was the action of the pilot in continuing flight over mountainous terrain under instrument conditions at an altitude below the minimum authorized instrument altitude.

BY THE CIVIL AERONAUTICS BOARD:

/s/ OSWALD RYAN

/s/ HARLLEE BRANCH

/s/ JOSH LEE

Fogue, Chairman, and Young, Member, did not take part in the decision.

SUPPLEMENTAL DATA

Investigation and Hearing

The Washington Office of the Civil Aeronautics Board received notification about 2200 on the day of the accident and immediately initiated an investigation in accordance with the provisions of Section 702(a)(2) of the Civil Aeronautics Act of 1938, as amended. An Air Safety Investigator of the Safety Bureau of the Board departed Washington via a special Pennsylvania-Central Airlines' aircraft at 0330, April 15, for Morgantown and was joined by others of the Safety Bureau staff who assisted in the investigation.

The Board ordered a Public Hearing which was held on April 21, 24, and 25, at Morgantown. The Chief, Investigation Section, Safety Bureau, presided and other personnel of the Safety Bureau staff participated.

Air Carrier

Pennsylvania-Central Airlines, a Delaware corporation with headquarters in Washington, D. C., was operating as an air carrier under a certificate of public convenience and necessity and an air carrier operating certificate, both issued pursuant to the Civil Aeronautics Act of 1938, as amended. These certificates authorized the corporation to fly passengers, property, and mail between various points in the United States including Pittsburgh and Birmingham.

Flight Personnel

Captain Harold Houston Jones, age 32, of Alexandria, Virginia, was employed by the company November 1940 and had accumulated a total of 9,481 hours, of which 5,914 were in DC-3 type equipment. First Officer William Thomas Repack, age 29, of McKees Rocks, Pennsylvania, was employed by the

company in May 1944 and had accumulated a total of 3,832 hours, of which 769 hours were in DC-3 aircraft. Marion Grace Adams, age 21, of Bellevue, Pennsylvania, was hostess. Both pilots were properly certificated for the flight involved and the captain had been qualified for the route.

Aircraft

The Douglas DC-3, serial number 2262, NC 25692, was manufactured in 1940 and had been flown approximately 13,040 hours with 146 hours since the last major overhaul. It was equipped with two Wright Cyclone G-102A engines with 1736 hours and 8763 hours, each having 146 hours since the last major overhaul. Hamilton Standard hydromatic propellers were installed. At the time of departure from Pittsburgh the plane was loaded within allowable limitations and the weight was distributed properly with respect to the center of gravity.