

AIRCRAFT ACCIDENT REPORT ✓

ADOPTED November 3, 1960

RELEASED November 8, 1960

ALLEGHENY AIRLINES, INC., MARTIN 202, N 174A,
NEAR WILLIAMSPORT, PENNSYLVANIA, DECEMBER 1, 1959

SYNOPSIS

At approximately 0947 e. s. t , on December 1, 1959, an Allegheny Airlines Martin 202, N 174A, crashed on Bald Eagle Mountain about 1 3 miles south of the Williamsport, Pennsylvania, Airport. The crew of 3, one additional crew member, and 21 of the 22 revenue passengers were killed.

Allegheny Airlines Flight 371, a regularly scheduled flight, departed Harrisburg, Pennsylvania, and proceeded routinely to Williamsport, Pennsylvania, where it was observed in an approach to the airport.

The aircraft was observed to make a left turn while on final approach and disappear into clouds and snow showers on a southerly heading toward Bald Eagle Mountain where it was heard to crash shortly thereafter.

The Board believes that this accident was caused by the captain's failure to execute a timely abandoned approach. The probable accidental caging of the fluxgate compass, which would have resulted in an erroneous heading indication, is considered to be a likely contributing factor.

Allegheny Airlines, immediately after learning of the possible effect of an accidental caging of the fluxgate compass, installed guards on the four aircraft in its fleet which had similar fluxgate compass caging switch installations.

A recommendation has been made by the Board to the Administrator of the Federal Aviation Agency that suitable guards be required on all aircraft that have fluxgate compass caging switches located in a position which would permit inadvertent actuation.

Investigation

The Flight

Flight 371 of December 1, 1959, was scheduled between Philadelphia, Pennsylvania, and Cleveland, Ohio, with stops at Harrisburg, Williamsport, Bradford, and Erie. The flight originated at Philadelphia after departing Atlantic City at 0718^{1/} as Ferry Flight 174 to Philadelphia.

^{1/} All times herein are eastern standard based on the 24-hour clock

Prior to the departure of Flight 371 Captain Goldsmith received the available en route and terminal weather reports and forecasts. The flight was dispatched IFR but the captain elected to depart VFR because of the existing VFR weather en route. Allegheny company policy is to dispatch all flights IFR unless load conditions or navigation facilities require a VFR release

Flight 371 departed Philadelphia at 0815 with 17 revenue passengers. At the time of takeoff the gross weight of the aircraft was 36,477 pounds, which was 2,083 pounds below the allowable gross takeoff weight at Philadelphia for landing at Harrisburg

Following the takeoff from Philadelphia the flight proceeded VFR to Harrisburg where it landed at 0851 without incident and deplaned four passengers and 404 pounds of cargo.

Flight 371 departed Harrisburg at 0906 with 22 revenue passengers, one additional crew member, and 598 pounds of baggage, mail, and cargo. The gross weight at time of takeoff was 36,429 pounds, which was 2,081 pounds below the allowable takeoff weight at Harrisburg for landing at Williamsport.

The Williamsport weather at 0855 was reported as Partial obscuration, 1,000 feet scattered, estimated 2,500 overcast, visibility 2 miles, light snow; temperature 32, dewpoint 30, wind west-northwest at seven knots; altimeter 30.26. Remarks - 4/10 sky obscured by snow few fracto-stratus at 1,000 feet along mountains. This weather was not available to the pilot at the time of his departure.

At 0923 Flight 371 reported to Williamsport radio that it was making 360-degree turns five minutes south of the Williamsport low frequency range at an altitude of 3,500 feet, VFR, and requested an instrument clearance to the Williamsport Airport. Williamsport radio responded by giving the 0917 Williamsport weather observation, which was: Precipitation ceiling 1,000 feet, sky obscured; visibility one mile in light snow, wind west at five knots; altimeter 30.26. At this time Williamsport radio requested that the flight stand by for clearance. At 0927 Flight 371 was cleared direct to the Williamsport low frequency range from its present position, to maintain 4,000 feet. At 0928 New York Center instructed Williamsport radio to advise Flight 371 to report north of Victor Airway 232. The flight received this information at 0930. At 0931 Flight 371 advised that it was north of Victor Airway 232. At 0933 Flight 371 was cleared for an approach to the Williamsport Airport, to report on the ground, or cancelling IFR. At this time Flight 371 reported over the Williamsport low frequency range, leaving 4,000 feet, and commencing an approach. At 0935 the Williamsport 0934 weather observation was given to Flight 371 as being 1,000-foot scattered, precipitation obscuration 2,000 feet; visibility 1-1/2 miles in light snow, wind west at four knots, altimeter setting 30.26 inches. Allegheny minimums for this approach to the Williamsport Airport are 900 feet ceiling and 1-1/2 miles visibility.

At 0941 Flight 371 reported over the low frequency range on final approach and the communicator noted the time as being 0941. At this time the flight was advised of the surface wind, altimeter setting, and that the runway lights were on high brilliancy on runway 9-27. Flight 371 acknowledged all of these transmissions from Williamsport radio. At 0942 the flight reported in range to the company on company frequency. At this time the company advised that their altimeter setting was 30.25 inches and requested the arrival and departure times of the flight at Harrisburg. Flight 371 acknowledged the altimeter setting but did not relay the time information requested.

At approximately 0945 Flight 371 was observed over the airport, too high however to effect a landing. After this initial approach to the field, Flight 371 flew over the field and made a right turn for a circling approach to runway 27. As this circle was apparently completed, the aircraft was observed to roll out of its right turn and into a left turn and proceed in level flight, on a southerly direction, disappearing into snow showers and clouds. One observer believed that at the time the aircraft commenced this left turn to the southerly heading it was approximately one-fourth of a mile from the end of runway 27 and at an altitude of approximately 400 feet above the ground.

A short while after Flight 371 was seen to disappear into the snow showers and clouds on a southerly heading a loud explosive-type noise was heard at approximately 0947. After all attempts to contact Flight 371 had failed, search and rescue at Olmstead Air Force Base, Middletown, Pennsylvania, was advised of a possible crash. At approximately 1120 the wreckage of Flight 371 was sighted on Bald Eagle Mountain at an elevation of 1,150 m s l. on a 172-degree magnetic heading from and about one and one-third miles south of the approach end of runway 27. (See Attachment "A")

Airport and Ground Facilities

The Williamsport Airport has only a low frequency (385 kc.) radio range for instrument approach to the field. This low frequency range approach utilizes a low frequency radio beacon (266 kc.) and a marker beacon. All of these facilities were checked by the FAA on December 2, 1959, and found to be operating within standard performance requirements and the two frequencies, 385 kc. and 266 kc., were found to be free of interference within the service area. Both of these radio facilities were determined to have been in operation at the time of the accident.

The Williamsport low frequency range station is located 6.1 nautical miles from the airport and the course from the range to the airport is 285 degrees magnetic or slightly to the right of the west leg of the beam for which the outbound heading is 281 degrees.

At the time of this accident there was no control tower in operation at the Williamsport Airport. ^{2/} Contact with the airport was through the communicator in the Williamsport (FSS) radio facility.

Prior to and at the time of the accident the airport rotating beacon was on and turning and the runway lights on runway 27 were on high brilliancy.

The Crew

Captain Thomas R. Goldsmith, age 31, had approximately 9,790 hours total flying time, 1,180 hours of which were as a captain on Martin 202 equipment. He had been employed as a pilot by Allegheny Airlines since July 14, 1950. His last proficiency check on Martin 202 equipment was satisfactorily completed on September 19, 1959. Prior to the flight of December 1, 1959, Captain Goldsmith had a rest period of 8 hours and 59 minutes. His last first-class physical was satisfactorily passed on September 29, 1959. Copilot George M. Bowers, age 32, had approximately 1,153 hours flying time according to the records of Allegheny Airlines. Of this time 92 40 hours were as a copilot in Martin 202 aircraft. Bower's last copilot check was conducted October 22, 1959, in DC-3 equipment and his last first-class medical was satisfactorily passed on May 22, 1959.

^{2/} A control tower was in the process of being put into service at the time of the accident and commenced operations on December 5, 1959.

An additional crew member, Donald W. Tygert, employed as a copilot occupied the jump seat on Flight 371. Tygert was 26 years old and his flying time was approximately 4,274 hours, 85 27 hours of which were in Martin 202 aircraft. His last line check was completed on October 19, 1959, in Martin 202 equipment and his last first-class medical was passed on October 10, 1959. Flight Attendant William T. Conger, age 28, was employed January 22, 1956.

Powerplants

Both engines and both propellers were examined at the scene since the terrain made it impossible to remove them intact for study.

Both engines broke free from the aircraft at impact and rolled down the very steep slope. The left engine was found approximately 70 feet, and the right engine 180 feet, from the main wreckage. Fire damage to the engines was light and was exhibited only in the area of flammable fluid lines. The accessories mounted at the rear of the right engine were, however, subjected to some heat damage.

Impact damage to both engines was relatively light. The scavenge pumps, main oil screens, sump plugs, and finger screens of both engines were examined and failed to show any of the contamination associated with an engine failure.

One spark plug was removed from each cylinder and the examination of the electrodes showed them all to be normal in appearance. The combustion chambers were examined with the aid of a boroscope and all appeared normal.

The magnetos, propeller governors, fuel pumps, carburetors, vacuum pumps, and hydraulic pumps were removed from the engines and taken to the shops of Allegheny Airlines for test and examination.

The propellers were examined and all blades on both the right and left propellers were found to have broken off irregularly.

The propeller piston was positioned at $\angle 43$ degrees in each propeller and the three shim plates on the left propeller were marked relative to blade angle at $\angle 46$ degrees and the shim plates of the right propeller were marked at $\angle 46$ degrees, $\angle 42$ degrees, and $\angle 38$ degrees, respectively.

There was no evidence to indicate inflight failure of any of the components of the powerplants. The propeller blade angles at impact and the relatively uniform breakage of the propeller blades were consistent with appreciable power being produced at impact.

Instruments

The pilot compartment and the instrument panels were subjected to extensive impact damage and subsequent heavy ground fire and many of the instruments were completely destroyed. All those instruments or parts of instruments which were recovered were removed from the scene for examination and study. Particular attention was paid to direction-indicating instruments.

The captain's master direction indicator (MDI) was found with the compass card in position and seized in the relatively intact front end housing. The indicated heading was approximately 262 degrees. The repeater indicator from the copilot's panel was found in a badly burned condition, but relatively undamaged by impact. Its compass

card was held firmly by the heat-distorted front end assembly and indicated a heading of approximately 88 degrees. It has been demonstrated that the compass card of the repeater indicator is subject to random displacement when its electrical power has been removed. An attempt was made to determine the heading information being transmitted electrically to the repeater indicator by the MDI at the time of impact; however, impact forces had dislodged the transmitting autosyn of the MDI from its mounting and the rotor shaft, although visibly bent, was free to rotate and it was impossible to establish the angular position of the rotor at the time of impact.

In the examination of the fluxgate transmitter it was found that the lower housing of the unit had incurred impact damage and that while the gyro reacted normally to the erection caging functions it eventually precessed slightly in the pitch axis owing to contamination in the unit introduced as a result of exposure to the elements and contaminants subsequent to the crash. The gyro was caged to preclude gyro tilt and measurements of indicated heading were made on a test stand at 30-degree intervals from 0 to 360 degrees. Errors in the indicated headings ranged from + 4 degrees at 240 degrees to -5 degrees at 60 degrees.

During the investigation of this accident it was determined that an inadvertent caging of the fluxgate compass was possible owing to the position in which the caging switch was mounted, coupled with the fact that no guard was provided for this switch. (See Attachment "B")

The purpose of this caging switch is to rapidly erect the gyro in the transmitter unit located in the left wing. This erection system erects the gyro to a vertical position in respect to the aircraft only, and is independent of the rolling-ball type erection mechanism incorporated into the system which erects the gyro to a vertical position relative to the surface of the earth. The caging of this gyro is normally accomplished on the ground prior to flight and with the aircraft in a level position.

During the course of the investigation two flight tests were conducted in Martin 202 aircraft with identical fluxgate compass equipment installed. During these tests momentary depression of the fluxgate compass caging switch resulted in the initiation of the caging cycle which required five to six seconds and caused erroneous heading information to the right of up to 90 degrees. These errors were obtained as a result of depressing the caging switch while the aircraft was in a right bank to correspond to the right landing pattern approach of the aircraft at Williamsport.

In addition to the two flight tests performed in the Martin 202 aircraft, similar tests were conducted in a DC-3 aircraft which had similar fluxgate compass equipment installed and tests were also conducted with similar type equipment installed in a Helmholtz test stand. The data thus collected were analyzed and it was determined that the magnitude and direction of the error in indicated heading is a function of the bank angle and aircraft heading at the time of caging. Completing the cage-uncage cycle while in a banked attitude to the right and while on a southeast or southwest heading produced a positive error in indicated heading. A heading to the left of that intended would be flown if the pilot were to use the compass system to maintain a given heading. Conversely, if the cage-uncage cycle was completed while on a northwest or northeast heading the error would be negative and the actual heading would be to the right of that indicated.

Investigation showed that the secondary or standby means of directional information which was available to the captain was an air-driven directional gyro. This unit appeared to be capable of normal operation prior to the accident.

Weather

The area forecast issued by the U S Weather Bureau Forecast Center at Idlewild Airport, New York, for the 12-hour period beginning at 0800 e s t , for the route between Harrisburg and Selinsgrove, indicated ceilings of 3,000 to 4,000 feet with tops at 8,000 feet and a higher broken to overcast cloud deck at 10,000 feet with tops at about 14,000 feet Conditions were forecast to be locally variable to 1,000-foot ceiling and visibility five miles in snow showers and a possibility of freezing rain until 1200 e s t.

The Williamsport terminal forecast was also prepared by the Weather Bureau Forecast Center at Idlewild. This forecast was valid from 0600 to 1800 and indicated that until 1100 conditions would be 4,000 overcast, wind west southwest 15 miles per hour; occasional light snow showers, chance of moderate freezing rain

A flash advisory was issued effective at 0820, valid until 1120, and called for ceilings below 1,000 feet and visibility occasionally two miles or less in snow showers for an area which included Williamsport

This 0820 flash advisory was not furnished to the crew of Flight 371, however, the crew was given the current weather at Williamsport at 0923 and again at 0935 from the Williamsport radio communicator The 0934 Williamsport weather which Flight 371 received at 0935 was as follows 1,000 feet scattered, precipitation obscuration 2,000 feet, visibility 1-1/2 miles in light snow, wind west at four knots, altimeter setting 30.26 inches

Witnesses

A number of persons responded to the Board's request for witnesses to this accident Of the persons contacted only a few were able to give information which could be correlated with the aircraft involved in this accident One witness was a meteorologist employed by the U S Weather Bureau who was on duty at the Williamsport Airport at the time of the accident This witness observed the aircraft first approach the field too high to land, then turn to the right approximately over the Administration Building to enter a landing pattern for runway 27 The aircraft was visible to this witness throughout its landing pattern except for approximately four seconds while on the base leg due to intermittent obscuration by fracto-cumulus clouds This witness observed the aircraft to continue on its approach to a position which he estimated to be approximately one-fourth of a mile from the end of runway 27, at an altitude of approximately 400 feet above the ground, and on a heading of approximately 270 degrees The witness stated that at this point the aircraft was turned to its left and then disappeared into clouds and snow showers in a southerly direction toward Bald Eagle Mountain He stated that a short while later he heard an increase in power of the aircraft's engines, followed almost immediately by the sound of the aircraft crashing into the mountain

Several deer hunters were in the immediate area of the crash. They indicated that at the time of the crash the visibility was so restricted by the snow that they were unable to continue their hunting

Another witness was the captain of a Capital Airlines DC-3 This captain stated that at the time of his observation he was parked near the intersection of the taxiway and runway 27, approximately 150 feet back, awaiting clearance for his takeoff which was contingent upon the landing of the aircraft then making its approach (Flight 371)

He saw only a fleeting glimpse of an aircraft through the clouds proceeding on a southerly heading from its position south of the field. The captain stated he thereafter asked his first officer if he also had seen the aircraft and the first officer stated that he had not. After realizing that the aircraft might be off course or too far south if in an approach, the captain made written notes of his observations which were as follows: The heading of his aircraft (Capital DC-3) was 190 degrees magnetic, the time was between 0947 and 0948, the other aircraft (presumably Allegheny Flight 371) was on a southerly heading, straight and level flight; the altitude of the aircraft was not determined since the aircraft was visible for only a fraction of a second.

Several other witnesses also observed Flight 371 during the turn onto what would correspond to the final approach and its subsequent left turn onto the southerly heading. These witnesses all stated that they lost sight of the aircraft shortly after it was turned onto its southerly heading, owing to the clouds and/or snow showers existing in the direction of Bald Eagle Mountain.

One of the passengers aboard the aircraft survived the accident. This passenger suffered severe burns in the intense fire which followed the impact but was able to walk out of the wrecked fuselage. Because of his injuries this witness was unable to talk to CAB investigators until February 3, 1960, some two months after the accident.

This witness stated that upon approaching the Williamsport Airport the flight steward announced this fact and the "No Smoking" and "Fasten Seat Belts" signs were lighted. He stated that he observed the airport on the initial pass over the field and that the aircraft was then turned right, and when it came around the second time it was descending. He stated that on the second approach he saw the landing strips and that the aircraft, which was going straight into the airport, was turned left, entered a cloud bank or fog, and crashed shortly thereafter.

The witness indicated that shortly after entering the cloud or fog bank he heard the pilot "gun the motors" and at the same time he saw trees. The aircraft crashed almost immediately after this.

This witness indicated that after this left turn the aircraft was flown straight and level in the clouds or fog until just before the crash when "the nose seemed to lift up." Just prior to the accident the cabin lights were on and nothing unusual was noticed.

Structures

The aircraft was found to have struck the north side of Bald Eagle Mountain in a very rocky area on a heading of 240 degrees magnetic and at an elevation of 1,150 feet above sea level. Trees clipped off by the aircraft before ground contact indicated the aircraft was banked to the right about 45 to 50 degrees.

After initial contact the fuselage came to rest about 300 feet from the point of first contact on a heading of 260 degrees magnetic. Most of the passenger cabin area was consumed by the ground fire which followed the crash.

The actuating cylinders from the right and nose landing gears and their failed drag links showed them to have been extended at impact. The left landing gear was badly burned by the ground fire, but was found in a position about two-thirds retracted. The flaps were extended approximately 18 degrees.

Examination of the flight controls, wings, tail surfaces, and control surfaces failed to show any evidence of inflight malfunction or failure

Human Factors

In an effort to determine whether or not any physiological factors may have caused or contributed to this accident, complete autopsies were performed on the captain and the copilot.

The captain was found to have had no preexisting disease, condition, or defect which could be related to the accident. Laboratory test failed to show the presence of either alcohol or drugs. The captain was found to have suffered multiple severe injuries caused by forces of abrupt deceleration.

The autopsy of the first officer was negative for evidence of preexisting disease, condition, or defect which could be related to this accident; however, it was determined that this first officer, who was 32 years old, had marked atherosclerosis of the coronary arteries. Examination of the heart including microscopic studies of the heart tissues, failed to adduce any evidence of either old or recent scars or of dead tissue. The autopsy showed the existence of multiple severe injuries which included a fracture of the skull, epidural hematoma (150 cc), and traumatic amputation of the low extremities.

The distribution of cockpit wreckage and the position of the three crew members' bodies showed that the captain was occupying the left seat, the first officer was occupying the right seat, and the additional crew member was occupying the jump seat.

Analysis

Powerplants, Propellers, and Structures

The factual information developed in the investigation shows that no malfunction of the aircraft engines, propellers, or structure caused or contributed to this accident.

Operational Aspects

The possibility of an inadvertent caging of the fluxgate compass while the aircraft was in the right landing pattern necessitated a detailed exploration of this possibility. The flight tests conducted showed that the caging switch could be actuated inadvertently by the foot of a person occupying the jump seat and that a serious error could thereby be induced into this system.

The policy Allegheny Airlines followed on an instrument landing approach such as the one at Williamsport is that the approach will be flown by the captain while occupying the left seat. During such an approach therefore the captain in the left seat and while flying in a right pattern would have the airport to his right and he would have had some difficulty in keeping it in sight. In addition, the aircraft on the base leg segment of the circling approach was intermittently in snow showers or clouds.

It is believed that during the base leg the captain relied on the MDI of the fluxgate compass owing to the weather and cockpit visibility restrictions that existed.

It is believed that the fluxgate compass was functioning as evidenced by the fact that the captain had successfully completed an instrument approach and subsequent examination of the fluxgate showed it to be operable after the accident

The position of the caging switch on the back of the pedestal (see Attachment "B") coupled with the lack of a guard for this switch left it exposed to accidental actuation by any person occupying the jump seat

Analysis of the fact situation revealed by this investigation indicates that the caging switch could have been accidentally actuated by the foot of the crew member occupying the jump seat during the initial part of the base leg. This is considered likely since at this segment of the approach the crew members would be attempting to locate the landing runway and it is probable that the crew member in the jump seat would have been leaning forward in an effort to locate the runway and would thus have made some contact with the rear of the pedestal because of its proximity to the jump seat

Accidental caging of the fluxgate compass with the aircraft on any southeast or southwesterly heading would have induced an error to the right which would have shown up on the MDI by indicating the aircraft was turned to the right in excess of its actual heading

It is believed that the captain was induced to refer to his instruments on the base leg of the landing approach because of the restrictions to visibility encountered and by cockpit limitations to his field of vision. The captain continued his turn intending to roll out on the runway heading but reference to the MDI indicated that he had overshot his heading so he immediately turned to the left to an indicated heading of 270 degrees. After rolling out on this heading he was unable to see the field which was now to his right and he continued on for a few seconds expecting to see the field momentarily. Owing to the induced error of approximately 80 degrees to the right the aircraft was now on an actual heading of approximately 190 degrees and the heading for Bald Eagle Mountain. The aircraft then encountered solid instrument conditions. The captain continued his flight on the indicated heading of 270 degrees for approximately 12 to 14 seconds, during which the aircraft was converging with the northern slope of Bald Eagle Mountain. During this time the captain noted the discrepancy between the MDI and his other directional instruments and caged the fluxgate compass in an effort to determine his correct heading. Upon completion of the caging cycle the MDI turned to a heading of approximately 190 degrees. At this time, just prior to the crash, the aircraft was turned to the right, full throttle was applied, and gear retraction was initiated. Before this turn could be completed the aircraft crashed into the trees and rocky terrain of the mountain.

The possibility of accounting for the left turn by the captain having initiated an abandoned approach was also considered. For this to have occurred the induced error in the fluxgate compass would have to be to the left in the order of 80 degrees and would have been induced by accidental caging of the fluxgate compass while on a northeasterly or northwesterly heading. With such an error and if the captain turned to an approximate heading of 100 degrees to go back to the L/F range, the aircraft would then have been on an actual heading of 180 degrees. This is compatible with the statements of the ground witnesses.

Several facts indicate that this possibility did not occur. The aircraft struck the mountain at approximately the same altitude that it was seen when departing the

airport The landing gear was in the down position except for the right main gear which was in transit to the up position. The power increase was initiated at the same time the aircraft was turned to the right just prior to hitting the mountain. It is believed that if in fact the captain had initiated an abandoned approach all of these things would have been started immediately upon encountering instrument conditions and that the captain would also advise by radio that the approach was being abandoned.

Human Factors

The autopsies of the crew members eliminated all but one physiological factor which could have contributed to this accident.

The finding of atherosclerosis in the first officer's coronary arteries required a detailed study of the possibility of an incapacitation of this individual, and possible subsequent interference with the operation of the aircraft at a critical segment of its landing approach.

The existence of the epidural hematoma (150 cc.) when considering the effect of the traumatic amputation of the lower extremities and the other internal injuries indicates that this individual survived the crash. In addition, the examination of the heart and its tissue showed no evidence of any old or recent heart tissue damage. There is no evidence of incapacitation of the first officer prior to the crash or that incapacitation was a factor in this accident.

Conclusions

The captain made a normal instrument approach during which time the aircraft, its powerplants, systems, and its instruments functioned properly.

After completing the instrument approach the captain began his landing approach to the field but ceiling and visibility restrictions prevented him from landing on the initial landing approach to the field and a right circling approach to runway 27 was commenced. During the base leg of the circling approach to runway 27 it is probable that the caging switch of the fluxgate compass was accidentally actuated by the foot of the crew member occupying the jump seat thereby inducing an error of approximately 80 degrees to the right into the fluxgate compass system.

During the final segment of the circling landing approach the captain referred to his instruments owing to reduced weather visibility and cockpit field of vision limitations, and decided to roll out on and to hold the runway heading, either to effect a landing or to break out over the field in an area where he believed visual contact flight could be accomplished.

After proceeding on the indicated heading of 270 degrees for a short period the aircraft entered solid instrument conditions in which the aircraft proceeded for approximately 14 seconds. During this time the captain noted an apparent discrepancy between the MDI and the other directional instruments. He then caged the fluxgate compass while in level flight and upon the completion of the caging cycle determined that he was proceeding on a heading of approximately 190 degrees and as he started a right turn the aircraft crashed on Bald Eagle Mountain.

Probable Cause

The Board determines that the probable cause of this accident was the captain's failure to execute a timely abandoned approach. The probable accidental caging of the fluxgate compass, which would have resulted in an erroneous heading indication, is considered to be a likely contributing factor

BY THE CIVIL AERONAUTICS BOARD

/s/ WHITNEY GILLILLAND
Chairman

/s/ CHAN GURNEY
Vice Chairman

/s/ G JOSEPH MINETTI
Member

/s/ ALAN S BOYD
Member

/s/ J. S. BRAGDON
Member

S U P P L E M E N T A L D A T A

Investigation and Hearing

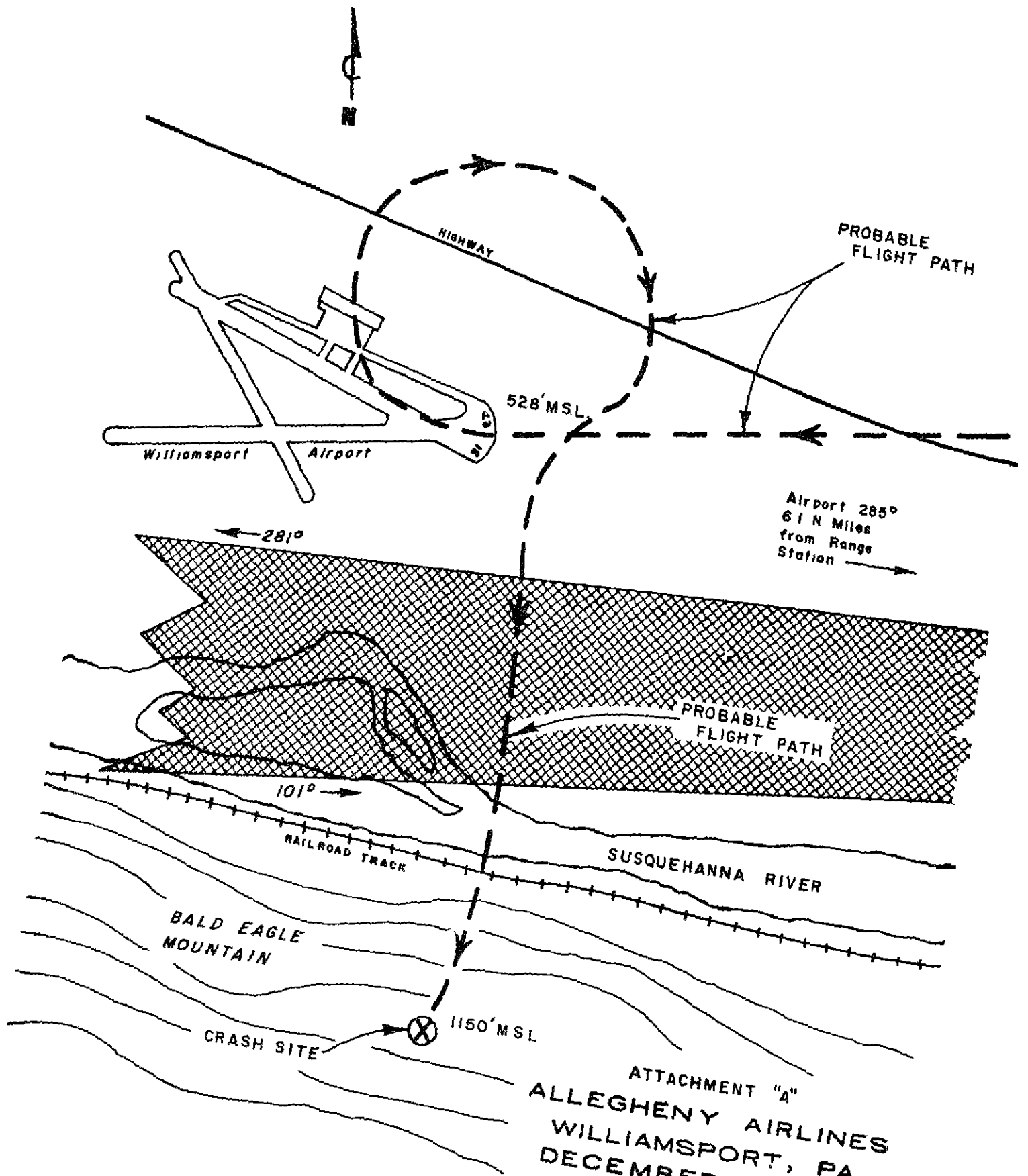
The Civil Aeronautics Board was notified of this accident at 1130 December 1, 1959, by the Allegheny Airlines dispatcher, and an investigation was immediately initiated in accordance with the provisions of Title VII of the Federal Aviation Act of 1958. A public hearing was ordered by the Board and was held in Williamsport, Pennsylvania, January 6, 1960.

Air Carrier

Allegheny Airlines is a Delaware corporation and maintains its principal offices in Washington, D. C. This corporation holds a current certificate of public convenience and necessity for local or feeder service and a valid air carrier operating certificate issued by the Federal Aviation Agency.

The Aircraft

The Martin 202 aircraft was manufactured August 12, 1947, by the Martin Aircraft Corporation. The aircraft was formerly owned by Pioneer Airlines and was acquired by Allegheny Airlines on January 14, 1956. It was equipped with two Pratt and Whitney R-2800-77 engines. The two propellers, model 43E60, were manufactured by Hamilton Standard.



ATTACHMENT "A"
 ALLEGHENY AIRLINES
 WILLIAMSPORT, PA.
 DECEMBER 1, 1959

