

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: January 24, 1947Released: January 30, 1947AMERICAN AIRLINES - THING MOUNTAIN, CALIFORNIA - March 3, 1946The Accident

American Airlines' Flight 6-103 crashed against the east slope of Thing Mountain, California, at 0812* March 3, 1946, during a scheduled flight from El Paso and while descending toward San Diego. The 22 passengers and the crew of 3 were fatally injured, and the Douglas DC-3 was demolished by impact and subsequent fire.

History of the Flight

Flight 6-103 departed New York, New York, at 0902 March 2, 1946, en route to San Diego, California. Crew changes were made at Nashville, Tennessee, and El Paso, Texas. The flight from New York to El Paso was completed without incident.

While at El Paso Flight 6-103 obtained an instrument flight clearance from Airway Traffic Control to cruise to San Diego at 8,000 feet with Long Beach, California, designated as alternate airport and with a stop scheduled at Tucson, Arizona. The flight departed El Paso at 0325 and arrived at Tucson at 0537. At 0559 the aircraft departed Tucson and routine position reports were subsequently received from the flight over Casa Grande, Gila

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All times referred to in this report are Pacific Standard and based on the 24-hour clock.

Bend, and Yuma, Arizona. At 0754 the American Airlines radio operator at San Diego transmitted the 0750 weather report for San Diego: Indefinite ceiling 1,200 feet, broken clouds; visibility 8 miles. Receipt of this information was acknowledged by Flight 6-103 and immediately thereafter the flight reported that it had been over El Centro, California, at 0753 at 3,000 feet.

Los Angeles Airway Traffic Control delivered a clearance for Flight 6-103 to American Airlines radio station at San Diego clearing the flight to San Diego to cruise at 8,000 feet and to cross San Diego at an altitude of at least 500 feet above the overcast. The company station, in turn, attempted to relay the Airway Traffic Control clearance to the flight at 0812, however, after several attempts at establishing contact with the flight, Airway Traffic Control was advised that the clearance was not delivered. All further attempts to contact the flight were unsuccessful.

Routine search procedures were initiated immediately and at 1305 aircraft of the Naval Air Control Center at San Diego reported sighting the wreckage of Flight 6-103 on the east slope of Thing Mountain, approximately 50 miles east of San Diego.

Investigation

The wreckage was located on the east slope of Thing Mountain at an elevation of approximately 4,870 feet above sea level and at a point 10 miles ESE of Pine Valley, California. The point of impact was on the north edge of the east leg of San Diego radio range. It was apparent that the aircraft had struck Thing Mountain in an attitude of flight which was laterally horizontal but in a slight descent. The left wing tip made first contact with the ground causing the aircraft to whip to the left.

The right wing failed along the attack angle and was thrown forward of the wreckage. After coming to rest the entire forward portion of the fuselage was consumed by fire.

Further investigation of the wreckage disclosed no indication of failure of any part of the aircraft or malfunctioning of the power plants. It was apparent that both engines were operating at approximately cruising manifold pressure and rpm at the time of impact. The failure of the wings was obviously a result of impact. Because of the intense fire which followed the crash, few reliable indications were obtained from the instruments. However, one of the altimeters was set at 29.92 which was the altimeter setting at San Diego at the time of the accident. The landing gear and flaps were in the retracted position at the time of impact. The aircraft was not equipped with a flight analyzer.

The adverse weather in the vicinity of Thing Mountain was caused by a flow of cold maritime air from the Pacific which produced low ceilings as the air was lifted by the high terrain east of the coast. In the vicinity of Laguna Mountain, seven miles northwest of the scene of the accident, the ceiling and visibility were zero. As the air spilled over the ridge in the vicinity of Laguna Mountain and flowed into the valley east of the ridge, its relative humidity decreased and it is unlikely that any clouds existed more than 20 miles east of the ridge on which the aircraft crashed. An aftercast of the weather at the time, including reports of pilots flying in that vicinity at the time of the accident, disclosed that the top of the overcast was at approximately 7,000 feet in the vicinity of Laguna Mountain lowering toward both the east and the west.

Inspection of the aircraft maintenance records and the statements of pilots who had flown the aircraft from New York to El Paso indicated that all pilot reports had been given proper attention by maintenance personnel and no evidence was disclosed that the aircraft was not in airworthy condition at the time of its departure from El Paso.

A review of the flight from El Paso until the time it reported over El Centro disclosed no difficulties. Until shortly before the accident, the flight had been conducted with visual reference to the ground at all times. Ample fuel was carried on board at the time of the accident for the aircraft to have proceeded to its alternate airport after its estimated arrival over San Diego. It was determined from an examination of several watches found at the scene of the crash that the time of the accident was approximately 0812. A comparison of the distance between the scene of the crash and El Centro with the time which the aircraft was at each point indicates that the ground speed had been approximately 140 miles per hour. In view of the winds existing between the levels of 5,000 feet and 8,000 feet, such a ground speed would be considered normal for the 39 miles of flight between El Centro and Thing Mountain.

Discussion

It is likely that the cold maritime air spilling over the ridge as it flowed in an easterly direction would have a substantial vertical component. However, it is inconceivable that downdrafts could reach the proportions necessary to cause a 3,200-foot loss of altitude under the conditions which existed at the time if the flight had continued to cruise at 8,000 feet. The effect of the cold underrunning air upon the comparatively dry air it was displacing upwards would not have been conducive to convective lifting. The severe vertical components present above the level of free convection within more moist and unstable air

masses could not have existed in this area. The intensity of the winds in the Laguna Mountain area pointed toward the probability that considerable mechanical turbulence existed below the 8,000-foot level. Although some icing conditions existed above Mt. Laguna, it is highly improbable that Flight 6-103 encountered any clouds above the icing level between El Centro and Thing Mountain and it can be concluded, therefore, that the flight was not complicated by surface icing.

Inasmuch as no flight analyzer or barograph was carried on board it was not possible to determine the actual path of the aircraft in its descent from El Centro to Thing Mountain. Requirements for flight analyzers had been deleted from the Civil Air Regulations during the war because of the unavailability of parts required in maintenance.*

In summarizing the findings of the investigation it appears that the aircraft was in a normal flight attitude and probably in a slight descent at the time of the accident. It is apparent that the aircraft was operating at normal cruising power and under normal control at the time of impact.

* Prior to this accident the Safety Bureau had initiated a study to determine the advisability of reincorporating the requirement for flight analyzers into the Civil Air Regulations. However, it was determined that such devices had not been manufactured during the war and in order to provide a sufficient number for all aircraft employed in scheduled air commerce it would be necessary for the instrument manufacturers to begin again production of complete units. In view of the fact that the model flight analyzer employed prior to the war is universally regarded as obsolete, it was apparent that promulgation of such a requirement should be based upon models which more nearly meet the present requirements of the industry. Since it appeared that much development in this direction had already been accomplished for the armed forces during the war, it was decided that a delay in reinstating this portion of the Civil Air Regulations was warranted. The Safety Bureau has worked very closely with manufacturers and air carrier operators in carrying this study to as rapid a conclusion as possible. At the present time service tests are being conducted on several models and it is anticipated that in the near future these tests will have determined the basis on which the requirement for these devices may be again incorporated in the Civil Air Regulations.

The reason for descent from 8,000 feet at El Centro to 4,370 feet at the scene of the accident has not been determined. In the light of the weather conditions which existed in the vicinity of the Laguna Range, an intentional descent cannot be justified. However, in view of the fact that the pilot had not obtained a clearance to San Diego from Los Angeles Airway Traffic Control and in view of the fact that contact conditions existed east of the ridge, it appears that the pilot or co-pilot was attempting to descend from El Centro while en route to San Diego in accordance with Contact Flight Rules. The terrain in the vicinity of Thing Mountain rises very steeply and the ceilings at the time of the accident were lowering rapidly. It is probable that the weather conditions at the scene of the accident were zero-zero at the time the aircraft reached that vicinity. In view of the lowering terrain toward the south and east, it is likely that, had the pilot encountered difficulty with either equipment or downdrafts as he approached Thing Mountain, he would have turned to the south or to the east toward more favorable terrain and weather conditions. However, no indications of equipment malfunctioning were disclosed and no evidence was found to indicate that the pilot was attempting to avoid that area. It can be concluded, therefore, that the descent was accomplished either by the pilot or with his approval.

Probable Cause

On the basis of the investigation, the Board determines that the probable cause of this accident was the action of the pilot in descending or permitting a descent to be made, into instrument conditions to an altitude below that required to maintain clearance over Thing Mountain. The reason for the descent has not been determined.

BY THE CIVIL AERONAUTICS BOARD:

/s/ OSWALD BYAN

/s/ HARLLEE BRANCH

/s/ CLARENCE M. YOUNG

Landis, Chairman, and Lee, Member, did not participate in the decision.

SUPPLEMENTAL DATA

Investigation and Hearing

The Civil Aeronautics Board was notified of the accident at 1030 March 3, 1946, 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. Air Safety Investigators of the Board's Santa Monica office arrived at the scene of the accident at 1545 the same date and were subsequently assisted in the investigation by other investigators of the Safety Bureau staff. A public hearing was ordered by the Board and was held at San Diego, California, March 15 and 16, 1946.

Air Carrier

American Airlines is incorporated under the laws of the State of Delaware, maintaining its general offices in New York City and operating under a Certificate of Public Convenience and Necessity and Air Carrier Operating Certificate both issued pursuant to the Civil Aeronautics Act of 1938, as amended. These certificates were current at the time of the accident and authorized the company to transport persons, property and mail between various points in the United States, including El Paso, Texas, and San Diego, California.

Flight Personnel

Captain Samuel Edward Stoner, age 30, of San Gabriel, California, was employed by the company September 6, 1939, and at the time of the accident acted in the capacity of captain in command of the aircraft. Until the date of the accident he had logged a total of 6,973 hours, of which approximately 4,235 hours had been obtained in DC-3 equipment. First Officer

Bennett Edward Baker, Jr., age 25, of Brinkley, Arkansas, was employed by the company December 4, 1945, and at the time of the accident was acting in the capacity of co-pilot of the aircraft. He had accumulated a total of 3,300 hours' flying time of which approximately 1,000 hours were obtained as First Pilot in the Navy. Maxime Catherine Rickard, age 23, was flight stewardess. Both pilots were properly certificated and the captain was qualified over the route.

Aircraft

The Douglas DC-3, G-102, NC 21799, was certificated in accordance with Civil Air Regulations. Until the date of the accident it had been operated a total of 16,322 hours with approximately 6,726 hours since the last major overhaul. It was equipped with two Wright G-102 engines with 4,367 and 15,580 hours, respectively, for the left and right engines and 370 and 470 hours, respectively, since the last major overhaul. Hamilton Standard propellers were installed.