

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: December 10, 1948

Released: December 14, 1948

AMERICAN AIRLINES, INC. NEAR EL PASO, TEXAS, OCTOBER 8, 1947**The Accident**

At approximately 0755,¹ October 8, 1947, 35 miles west of El Paso, Texas, an American Airlines' DC-4, aircraft NC-90432, executed a violent air maneuver. As a result, 5 crew members and 30 of the 49 passengers received minor injuries, and the aircraft received minor damage.

History of the Flight

The flight, No. 311, departed New York, New York, at 1900, October 7, 1947, for Los Angeles, California. A scheduled stop had been made at Dallas, Texas, from which point en route the flight continued with a new crew consisting of C. R. Sisto, Melvin Logan, and John Beck, all of whom were captains for American Airlines. C. R. Sisto flew as pilot, Melvin Logan as copilot, and John Beck as observer to obtain familiarization in the DC-4 aircraft. The flight departed from Dallas at 0602 and after reaching a cruising altitude of 8,000 feet, Captain Sisto, who was then flying in the left pilot's seat and in command of the flight, exchanged his seat with Captain Beck to the jump seat, which is slightly to the rear of and between the pilot's and copilot's seats.

The flight continued uneventfully until shortly after passing El Paso, Texas, when the aircraft, without Captain Beck changing any of the controls, started to climb. To correct the climb Captain Beck rolled the control for the elevator trim tab forward which would normally induce a nose-down attitude; however, the airplane continued to climb. Captain Beck continued to roll the elevator trim tab control forward, which resulted in increasing the nose-high or climbing attitude of the airplane. Captain Beck then attempted

to return the elevator trim tab control to its former position. Before he could accomplish this, the aircraft pitched downward violently, executing part of an outside loop and actually becoming inverted.

Captains Beck and Sisto, who did not have their seat belts fastened, were thrown to the top of the cockpit and accidentally struck the feathering control thereby feathering propellers Nos. 1, 2, and 4. Captain Logan, who had his seat belt fastened and remained in his seat, managed to roll the aircraft out of its inverted position and regained control of it about 300 to 400 feet above the ground. Propellers Nos. 1, 2, and 4 were then unfeathered, and the aircraft was flown back to El Paso where a normal landing was effected at 0811.

As a result of the violent dive, and the roll which was executed to regain control of the airplane, those passengers who did not have their safety belts fastened were thrown about inside of the cabin and received minor injuries. Also as a result of the maneuver, portions of the wing deicer boot were damaged, and the interior cabin lining was torn.

Investigation

The aircraft was placed under lock and key in a hanger at El Paso until a complete and thorough examination could be made by the Board's investigators. The day following the accident the crew made preliminary statements which indicated that there might have been some difficulty with the automatic pilot, which all three pilots stated had been engaged just prior to the maneuver previously described. For this reason tests were made of the automatic pilot which included its operation in this aircraft in actual flight. No evidence was found of any structural failure or mechanical

¹ All times noted in this report are Mountain Standard and based on the 24-hour clock.

malfunctioning of the automatic pilot or any other component of the aircraft.

Supplemental statements made by the three pilots on October 15, 1947, indicated that the automatic pilot was not engaged at any time during the flight but that Captain Sisto, sitting on the jump seat, engaged the gust lock while the aircraft was in level flight. Captains Beck and Logan further stated they were not aware of his action at the time. The aircraft started to climb and when rolling the elevator trim tab control nose-down did not return the plane to level flight, Captain Beck turned to Captain Sisto and asked, "Is the automatic pilot on?" Upon receiving a negative reply, he thought of the possibility of the gust lock having become engaged in flight and reached for the trim tab control to neutralize it. Before this could be accomplished, however, Sisto released the gust lock lever, and it being spring loaded permitted the gust lock to return to the unlocked position. The elevator was then free to be moved by the trim tab which had been placed in an extreme upward or airplane nose-down position. The sudden and violent movement of the elevator surfaces to a down position, upon release of the gust lock, caused the aircraft to pitch down violently as previously described.

The weather was clear and the air was smooth at the time of the maneuver.

Discussion

When the nose of the aircraft pitched downward, Captains Sisto and Beck were thrown to the top of the cockpit, accidentally feathering Nos. 1, 2, and 4 propellers. This caused a reduction of power which definitely decreased the speed of the dive and increased the nose-heaviness of the aircraft. This permitted completion of the maneuver to the extent of becoming fully inverted. Had not the propellers been feathered, the aircraft probably would have struck the ground. Captain Logan, held in his seat by his safety belt, took over control and with the aid of power from the No. 3 engine, executed a half roll to the left and returned the aircraft to a normal attitude.

Captain Logan is to be commended for his immediate recognition of the situation and for taking proper corrective action so promptly.

Charles Robert Sisto was named respondent in an action initiated by the Administrator of Civil Aeronautics in which the Administrator requested the suspension or revocation of the airman certificate held by him (Sisto). Oral argument was heard by the Board, and a Board opinion was issued October 26, 1948.²

Findings

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

1. The aircraft, carrier, and crew were properly certificated with the exception of Captain Sisto whose medical certificate had expired.
2. There was no structural failure or mechanical malfunctioning of the aircraft prior to the accident.
3. Thirty-five miles west of El Paso, Texas, Captain Sisto, without informing the operating crew, engaged the gust lock in flight.
4. Captain Beck, riding the left pilot's seat and unaware that the gust lock was engaged, rolled the elevator trim tab control forward to a nose-down position to check the climbing attitude of the aircraft.
5. The gust lock control was released from the locked position before the elevator trim tab control could be returned to neutral, and as a result the aircraft pitched downward out of control causing minor injuries to the passengers and crew, and minor damage to the aircraft.
6. Captains Beck and Sisto, who did not have their seat belts fastened, were thrown to the top of the cabin, and accidentally feathered propellers Nos. 1, 2, and 4.
7. Captain Logan, who was held in his seat by his fastened safety belt, regained

²Reference Board's Opinion; *D. W. Rentzel, Administrator of Civil Aeronautics, complainant, vs Charles Robert Sisto, respondent*, Docket No. SR-1887, October 26, 1948, in which the Civil Aeronautics Board found: that the respondent had violated certain Civil Air Regulations; that he had demonstrated a disregard for the principles of safety with respect to the operation of aircraft; that he lacked the discretion and good judgment necessary for the holder of an airman certificate with an airline transport pilot or commercial rating; and, that sufficient cause existed to justify at the time, or any time in the future, a refusal by the Administrator of Civil Aeronautics to issue to the respondent any pilot certificate or rating which would permit him to carry passengers for hire. That on the basis of the above findings the Board revoked respondent's pilot certificate effective November 5, 1948. It was further ordered that respondent shall not be issued any pilot certificate or rating which would permit him to carry passengers for hire.

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control of the aircraft approximately 400 feet above the ground.

Probable Cause

The Board determines that the probable cause of this accident was the engaging and disengaging of the gust lock in flight, which was without the pilot's knowledge.

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BY THE CIVIL AERONAUTICS BOARD:

/s/ JOSEPH J. O'CONNELL, JR.

/s/ HAROLD A. JONES

/s/ RUSSELL B. ADAMS

Oswald Ryan, Vice Chairman, and Josh Lee, Member, did not participate.

Supplemental Data

Investigation

The Civil Aeronautics Board received notification of the accident shortly after it occurred and immediately initiated an investigation in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended.

Air Carrier

American Airlines, Inc., a Delaware corporation with headquarters in New York, New York, 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 persons, property and mail between various points including New York, New York, and Los Angeles, California.

Flight Personnel

Captain Charles Robert Sisto, age 36, possessed an airline transport rating and had flown 10,400 hours, including 1,600 in DC-4 type equipment. He was employed by American Airlines March 13, 1939. His last physical examination was accomplished March 21, 1947, more than six months prior to this accident.

Captain Melvin D. Logan, age 40, possessed a valid airline transport rating and had flown 6,500 hours, including 608 in DC-4 type equipment. He was employed by American Airlines February 1, 1943. His last physical examination was accomplished June 16, 1947.

Captain John Beck, age 37, possessed a valid airline transport rating and had flown 9,000 hours, including 6 in DC-4 type equipment. He was employed by American Airlines April 15, 1940. His last physical examination was accomplished September 24, 1947.

The other two crew members were Stewardesses Marion Fagre and Barbara Chapman.

The Aircraft

NC-90432, A Douglas DC-4 manufactured May 27, 1944, was owned and operated by American Airlines, Inc. It had been flown 6,231 hours since new. The four Pratt & Whitney Twin Wasp engines had been flown 1 through 4 respectively-- 3316:44, 2543:16, 3148:36, and 3303:56 hours. At the time of departure from Dallas the total weight of the aircraft was less than the certificated gross weight, and the load was distributed within approved limits with respect to the center of gravity.