

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted November 30, 1949

Released: December 1, 1949

**EASTERN AIR LINES, INC., AND U. S. NAVY—CHESTERFIELD, N. J.,
JULY 30, 1949****The Accident**

Eastern Air Lines' Flight 557, a DC-3, NC-19963, and a U. S. Navy Grumman Hellcat single seat fighter Model F-6-F-5, No 72887, collided at an altitude of about 2,000 feet in the vicinity of Chesterfield, N. J., at about 1030,¹ July 30, 1949. All 15 occupants of the DC-3 and the pilot of the F-6-F-5 were killed and both aircraft were destroyed.

History of the Flight

The DC-3 was on a regularly scheduled flight en route from LaGuardia Field, N. Y., to Wilmington, Del., having originated at Boston, Mass., with Memphis, Tenn., as the destination. Takeoff from LaGuardia was at 1000, with 12 revenue passengers and a fresh crew consisting of Captain L. R. Matthews, Pilot J. B. Simmons, and Flight Attendant Peter Gobleck. The aircraft was loaded within the prescribed limits for weight and location of center of gravity. The clearance was in accordance with Visual Flight Rules. The flight reported its position as over Freehold, N. J., at 1017 and estimated arrival over Philadelphia, Pa., at 1037 and Wilmington, Del., at 1045. This was the last radio contact with the DC-3.

The F-6-F-5 was en route from the Naval Air Station, Anacostia, D. C., to the Naval Air Station, Quonset Point, R. I., on a training, or proficiency flight. Takeoff from Anacostia was at 0937 with the aircraft piloted by Lieutenant (j g) Robert V. Poe, USN. Clearance was in accordance with Visual Flight Rules, specifying a cruising speed of 160 knots (184 statute miles per hour) and an estimated time en route of two hours. There is no record of any position report or other radio contact from the F-6-F-5

¹All times referred to herein are Eastern Standard and based on the 24-hour clock

after it was cleared for takeoff by the Anacostia tower.

Weather conditions existing over the route of both aircraft were good. The visibility was 10 miles and there were scattered clouds at 12,000 feet.

At about 1030 the F-6-F-5 was observed to perform acrobatics and to "buzz" a small civil aircraft in the neighborhood of Chesterfield, N. J. These maneuvers terminated in collision between the F-6-F-5 and the DC-3.

Upon collision the fighter plane lost its left wing and the DC-3 lost the outer portion of its left wing. Both aircraft then fell in erratic paths, losing various parts while falling. The DC-3 burned when it struck the ground. The fighter's pilot was either seriously injured or killed at the time of the collision and was thrown clear of the aircraft during the descent. There was no indication that he attempted to use his parachute. The fighter did not burn on impact.

Investigation

Investigation disclosed that collision occurred at an approximate altitude of 2,000 feet (MSL) over a point about 1 1/6 miles distant, and on an approximate bearing of 112 degrees, from the center of Chesterfield, N. J. The position fixes the location of collision on Red Airway 3 at about 1/3 mile to the south-east (or to the left for an aircraft bound southwest) of the center of the airway. It is also about 1 1/3 mile to the left of the F-6-F-5's indicated course as drawn on its pilot's flight chart. This chart had been issued to the Navy pilot prior to his departure from Anacostia.

The small civil aircraft that was "buzzed" by the Navy fighter in the vicinity of Chesterfield, N. J., was a Piper Super Cruiser, being flown in an

easterly direction and at an altitude of about 1,000 feet by its owner, a private pilot. He reported that while he was in level flight, the fighter passed an estimated 100 feet directly in front of him and headed vertically upwards. His aircraft was momentarily put out of control by the fighter's wash. He then lost sight of the fighter as it passed up and in back of him. A few seconds later he saw it again starting up from below and to his rear. It continued up again passing in front of the Piper, although not as close as previously. This maneuver, described by the Piper pilot as a chandelle,² continued until he saw the fighter and a DC-3 collide at an estimated 700 or 1,000 feet above him. According to the testimony of the Piper pilot and ground witnesses, neither the DC-3 nor the F-6-F-5 made any evasive maneuver, and it may be concluded that neither pilot saw the other aircraft in time to avert a collision.

Detailed matching of portions of wreckage and paint marks from both aircraft shows conclusively that the first contact was between the leading edge of the F-6-F-5's left wing near the fuselage and close to its left wing guns, and the leading edge of the DC-3's left wing at a point about 14 1/2 feet inboard from the wing tip. Two of these left wing guns were found apart from the remainder of the wreckage of both aircraft and, inasmuch as they are heavy and compact, when they broke free they fell vertically except for such horizontal motion as they may have retained from their pre-collision motion. That horizontal motion, however, should have been small as the two aircraft collided while traveling in approximately opposite directions and at speeds probably not differing greatly. Therefore, the location of these guns is a seemingly reliable criterion in determining the geographical location of the collision and is used as a datum point.

Further examination shows that first contact was between the leading edges of the two left wings, almost simultaneously with the F-6-F-5's propeller striking the DC-3's left wing tip. The DC-3 was in straight level flight on a magnetic course of about 253 degrees and bound southwest on Red Airway 3, and the F-6-F-5 banked about 10 degrees to its right following a sharp climb and headed

approximately northeast. Distribution of the wreckage of the two aircraft followed a clearly defined pattern, that of the F-6-F-5 being to the northeast of the previously mentioned datum point (where the wing guns fell), that of the DC-3 being to the southwest of that point. Thus, following collision, both aircraft continued in their respective directions, losing parts as they fell, the F-6-F-5 striking the ground about 1/2 mile to the northeast, and the DC-3 about one mile to the southwest.

Examination of the wreckage of the F-6-F-5 revealed that the pilot's head struck the canopy. The pilot's body was found about 200 feet from the main wreckage. His parachute burst open on impact but its ring had not been pulled.

Analysis

The DC-3 departed LaGuardia Airport at 1000 under a Visual Flight Rule clearance. One routine position report was made over Freehold at 1017 and all evidence indicates that it was proceeding normally along the airway in accordance with the Civil Air Regulations and the carrier's own regulations. As the Piper's pilot was at an altitude of about 1,000 feet and estimated that collision occurred some 700 to 1,000 feet above his level, it may be assumed that the DC-3 was at an altitude of about 2,000 feet. That the DC-3 was at this altitude is further supported since Eastern Air Lines' regulations require that its flights adhere to fixed altitudes despite the fact that under Visual Flight Rules the Civil Air Regulations do not require adherence to a specific flight level if below 3,000 feet, except to remain above the 1,000-foot minimum for air carriers. However, the carrier's regulations do so require, and the DC-3 would have been at an even number of thousands of feet, i.e., two or four or six thousands, etc., while bound southwest.

The F-6-F-5 was off the ground at Anacostia at 0937 and the most reliable estimate as to the time of collision is 1030. During the intervening 53 minutes the F-6-F-5 had covered a distance of 133 statute miles, averaging 173 statute miles per hour ground speed. As the winds over the route were light (10 miles or less at all levels) and furthermore, were from the west and northwest, directions which would be generally abeam, they had a negligible effect upon the

²A sharp climbing turn ending with a reversal of direction.

F-6-F-5's ground speed. The difference between the planned speed of 184 statute miles per hour and that made good of 173 statute miles per hour places the F-6-F-5 only about three minutes behind schedule at the time of collision. Therefore, the pilot must have adhered quite closely to course until he reached the vicinity of the accident where he saw the small civil aircraft and "buzzed" it.

The Civil Air Regulations forbid that any aircraft be flown in such proximity to other aircraft as to create a collision hazard³. Also, the Civil Air Regulations forbid any acrobatic flight⁴ on any airway at any altitude⁵.

The Air Traffic Rules of the Civil Air Regulations apply to all aircraft, both civil and military. Directives of the Bureau of Aeronautics of the U S Navy specifically state that these Civil Air Regulations shall be observed by Navy flight personnel and also, by adoption, make these Civil Air Regulations a part of Navy Flight Rules. The Department of Navy has long and constantly impressed this fact on its flight personnel. Commanding Officers of Naval Air Stations, including Anacostia, have seen that parts of the Civil Air Regulations applicable to air traffic, acrobatic flight, and proximity to other aircraft, are prominently posted and in continual evidence upon their operation boards. Thus, Lieutenant Poe should have had knowledge of the Navy Regulations forbidding the kind of flight which ended in the accident.

From all the evidence in connection with this accident, it is concluded that the Navy pilot flew into the DC-3 following a pull-up from in front of the small civil aircraft. It is highly probable that the F-6-F-5 was either not seen from the DC-3 or seen so late that evasion was impossible.

The fact that the F-6-F-5 pilot's head struck the canopy indicates that the pilot was seriously injured or possibly killed outright at the time of the air collision, this probably accounted for his not having used his parachute.

³CAR 60 15 Proximity of aircraft. No person shall operate an aircraft in such proximity to other aircraft as to create a collision hazard.

⁴CAR 60 80 Acrobatic flight. Maneuvers intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal acceleration.

Note —The term "acrobatic flight" is not intended to include terms or maneuvers necessary to normal flight.

⁵CAR 60 16(b) No person shall engage in acrobatic flight within any civil airway or control zone.

Both the captain and first officer of the DC-3 were highly experienced and competent. Their experience included a large amount of flying over the New York-Washington airways and they were, as a consequence, acquainted with the unusually heavy air traffic, both scheduled and unscheduled on those airways.

The airways in the New York area have a high air traffic density. Furthermore, they pass over areas where the density of non-scheduled and itinerant flying is extremely high. This concentration of aircraft makes it imperative that all pilots in heavily congested areas comply with the Air Traffic Rules, and in addition places upon them the added responsibility of exercising a high degree of care in maintaining a lookout for other traffic.

As a result of recent collision accidents, the Civil Aeronautics Administration, the U S Navy, the U S Air Force, the Civil Aeronautics Board, and other agencies concerned, are jointly pursuing an intensive program for the apprehension of violators of the Civil Air Regulations, particularly with reference to so-called "buzzing" and/or reckless flying.

Findings

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

1 The air carrier, its aircraft, and crew were currently certificated for the subject flight.

2 The Navy aircraft was airworthy and its pilot was qualified for the subject flight.

3 The weather conditions over the route involved and at the time of the accident were visibility 10 miles, scattered clouds at 12,000 feet.

4 Both aircraft were being operated in accordance with Visual Flight Rules.

5 The DC-3 was proceeding in a south-westerly direction on the airway at an altitude of 2,000 feet at the time of collision.

6 The Navy pilot was performing acrobatics on the airway immediately prior to and at the time of collision.

7. The collision occurred on Red Airway 3, approximately 1-1/6 miles east-southeast of Chesterfield, N. J.

8. Neither aircraft was seen by the crew of the other in time to avoid collision.

9 The collision resulted in the destruction of both aircraft and death to all occupants.

Probable Cause

The Board determines that the probable cause of this accident was the reckless conduct of the Navy pilot in performing acrobatic maneuvers on a Civil Airway and his failure to notice the presence of an air carrier aircraft with which he collided.

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BY THE CIVIL AERONAUTICS BOARD

/s/ JOSEPH J O'CONNELL, JR

/s/ OSWALD RYAN

/s/ JOSH LEE

/s/ HAROLD A JONES

/s/ RUSSELL B ADAMS

Supplemental Data

Investigation and Hearing

The Civil Aeronautics Board received notification of the accident on July 30, 1949, at approximately 1115, by telephone from CAA Communications, LaGuardia Field, N. Y., and immediately initiated an investigation in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. As part of the investigation the hearing was held August 12, 1949, in Trenton, N. J.

Air Carrier

Eastern Air Lines, Inc., is a Delaware Corporation with head offices in New York City. The company holds a certificate of public convenience and necessity authorizing it to engage in air transportation between various points in the United States including New York, N. Y., and Wilmington, Del.

Flight Personnel

Captain L. R. Matthews, age 35, held a currently effective airline transport rating and at the time of the accident had a total of 10,013 flying hours, 5,595 of which were in DC-3 type aircraft. He had been employed by Eastern Air Lines since February 1942. His last CAA physical examination was on February 4, 1949.

First Officer J. B. Simmons, age 27, held an airman certificate No. 488945 and an instrument rating. At the time of the accident he had a total of 1,397 flying hours. He was employed by Eastern Air Lines in June 1946, and his last physical examination was accomplished on March 25, 1949.

Lt. (j.g.) Robert V. Poe, U. S. N., age 25, was a properly qualified and rated Naval aviator. At the time of the accident he had a total of 957 hours of flight time in Naval aircraft. Naval records indicate that he had never been reprimanded or disciplined for any infraction of Navy flying regulations.

The Aircraft

NC-19963, a DC-3, was purchased September 25, 1940. The aircraft was owned and operated by Eastern Air Lines, Inc., and was currently certificated by the Civil Aeronautics Administration. It had been flown a total of 37,840 hours since the time of its purchase. The two engines were Wright Cyclone, model No. SGR-1820-0202A. The propellers were Hamilton Standard, model No. 23E50.

The F-6-F-5, a Naval aircraft, 72887, was in an airworthy condition according to Navy records.