

## CIVIL AERONAUTICS BOARD

## ACCIDENT INVESTIGATION REPORT

Adopted: January 26, 1946

Released: January 31,

AMERICAN AIRLINES DC3 - TAYLORCRAFT TRAINING PLANE  
NEAR SALINE, MICHIGAN - DECEMBER 24, 1944

American Airlines' Flight 21 and a Taylorcraft trainer collided in flight approximately  $4\frac{1}{2}$  miles northeast of Saline, Michigan, on December 24, 1944. No one was injured. Despite major damage the DC3 was landed successfully in a cornfield. The Taylorcraft's rudder and elevator controls were rendered inoperative by impact and its occupants parachuted safely. The plane was demolished upon impact with the ground.

American's Flight 21 of December 24, en route from New York to Chicago, was dispatched from the intermediate stop of Detroit at 1125 EST.\* Take-off was made at 1128 by the First Officer who was to fly the airliner to Chicago, the next scheduled stop. The flight proceeded in a routine manner to its assigned altitude of 2500 feet and headed west. As it passed the Willow Run Airport the Captain made a radio report. Some traffic was expected at this point and the Captain delayed a minute or two before making the routine entries in his flight log. While making the entries, his attention was diverted momentarily from the flight path ahead. At about the same time the First Officer tuned the auxiliary receiver to the frequency of the next range station at Lansing, Michigan. He stated that as he leaned forward to line up the tuning dial his upper limit of vision was increased and he saw a yellow plane coming from above. He said he was startled and involuntarily depressed the left wing to clear the approaching plane but almost simultaneously felt an impact against the DC3's left wing. The Captain immediately took over the controls. The left wing went down about  $30^{\circ}$  and continued downward despite the Captain's efforts to level it. With the right engine idling and the left engine operating at emergency power the combined efforts of Captain and First Officer brought the aircraft level laterally but altitude could not be maintained. The Captain selected a field he could reach by turning only a few degrees to the right and landed with wheels up and flaps down. After passing through three wire fences the plane stopped in an upright position; no injuries were sustained in the collision or landing. The Captain exhibited high professional skill in landing the damaged plane.

An instructor and student had taken off from the Ypsilanti Airport in the Taylorcraft at approximately 1100 for an area about  $4\frac{1}{2}$  miles

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\* All time referred to herein is Eastern War and based on the 24-hour clock.

south of the airport. After practicing turns and spins there they returned to the vicinity of their base doing coordination and orientation exercises en route. They testified that they were flying southwest at an altitude of from 2400 to 2500 feet above sea level (approximately 1600 feet above the ground) at a point about  $1\frac{1}{4}$  miles southwest of the airport. Both occupants stated that they continued straight and level flight in a southwesterly direction for approximately three minutes, that both were on the controls, and that neither saw the DC3 prior to the collision. They felt the impact, heard a loud noise and the instructor realized that the rudder and elevator controls were inoperative. He instructed the student to jump and with his assistance she left the plane at about 1200 feet; the instructor bailed out at about 800 feet. The Taylorcraft struck the ground nose-first in a nearly vertical attitude and came to rest inverted.

A witness on the ground saw the two planes just before they collided and stated that both were flying straight and level, the DC3 headed approximately west, the Taylorcraft approximately southwest. It appeared to him that the Taylorcraft was slightly above the DC3. He said he diverted his attention momentarily and heard but did not see the collision.

Examination of the two aircraft indicated that the propeller blades of the DC3's left engine struck a metallic member of the Taylorcraft, presumed to have been the leaf spring of the tail wheel. The Taylorcraft's tail wheel in turn struck the carburetor air scoop of the DC3's left engine, breaking the scoop and the carburetor adapter. The left ski and landing gear Vee of the Taylorcraft became imbedded in the leading edge of the DC3's left wing. The left elevator and stabilizer of the Taylorcraft had been sheared off by the left propeller of the DC3 and had dropped free at the approximate point of collision. The stern post, right elevator and stabilizer tip, part of the vertical fin and the right landing gear had also been torn off. These parts were strewn within a radius of about 300 feet approximately one mile south of the Taylorcraft's main wreckage. The severed tail wheel was not found.

Examination of collision marks on the two aircraft indicated that both planes were in approximately level flight at the time they collided.

Weather conditions at the time and location of the collision were: Overcast 6500 feet with scattered clouds at 3000 to 3500 feet, visibility approximately 10 miles, calm.

#### DISCUSSION AND FINDINGS

This collision occurred just to the right (north) of the middle of Red Civil Airway No. 12. Both planes were within their rights in being on the airway.

The Taylorcraft, a side-by-side trainer in which the student sat on the left, was overtaken from the rear and the left. Only the student

could have seen the approaching DC3 and to have done so would have required her looking backwards. A high thin overcast which prevailed precluded the possibility of sun glare impairing pilot vision.

Upon the basis of available evidence the Board finds that:

1. The air carrier, both aircraft and flight personnel were properly certificated.
2. Weather conditions were good and had no bearing on the accident.
3. The DC3 was headed west, the Taylorcraft approximately southwest, both in straight and level flight about 1600 feet above the ground (2500 feet above sea level) when they collided.
4. The Taylorcraft being overtaken by the faster DC3 had right-of-way according to Civil Air Regulations.
5. At the time of the collision the attention of the DC3 Captain and First Officer was diverted to duties inside the cockpit. Neither the DC3 Captain nor the occupants of the Taylorcraft had observed the presence of the other. The DC3 First Officer saw the Taylorcraft just prior to impact.

#### PROBABLE CAUSE

The probable cause of this accident was lack of vigilance of the crew of the overtaking DC3.

BY THE CIVIL AERONAUTICS BOARD:

/s/ L. Welch Fogue

/s/ Harllae Branch

/s/ Oswald Ryan

/s/ Josh Lee

## SUPPLEMENTAL DATA

### Investigation and Hearing

The Chicago Office of the Civil Aeronautics Board received notification and the Board 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 from the Chicago Office arrived at the scene of the accident at 1322 the same day.

In connection with the investigation the Board ordered a Public Hearing which was held at Ypsilanti, Michigan, on December 29. The Assistant Director, Safety Bureau of the Board, served as Presiding Officer and others of the Board's Safety Bureau staff participated.

### Flight Personnel

Captain Victor Robert Evans, First Officer J. Richard Lyons, and Stewardess Mary Brauer, comprised the crew of the DC3. Both pilots were properly certificated and qualified for this flight.

Flight Instructor Donald Jay Gridley and Student Pilot Eleanor Cramer, both of Ypsilanti, Michigan, occupied the Taylorcraft. Gridley held a commercial pilot certificate with single-engine land, 0-80 h.p. and flight instructor ratings. Miss Cramer had received about five hours of dual instruction.

### Aircraft

Aircraft NC 21752, a Douglas DC3, was purchased by American Airlines on August 30, 1939, and sold to the Army on March 14, 1942. American repurchased it on October 18, 1944. This aircraft had been flown a total of 12,164 hours including approximately 341 since its last major overhaul. It was powered by two Wright Cyclone G-102 engines equipped with Hamilton Standard, hydromatic propellers.

Aircraft NC 24403, a Taylorcraft BL-65 on skis and powered by a Lycoming 65 h.p. engine, was manufactured in April 1940, and had been flown a total of 3406 hours including 19 hours since its last major overhaul. It was owned by Ypsilanti Air Service, Inc.

### Air Carrier

American Airlines, Inc., a Delaware corporation with headquarters in New York, N.Y., was operating as an air carrier under a currently effective 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 company to transport persons, property and mail between various points in the United States including Detroit and Chicago.