

BUREAU OF AIR COMMERCE
WASHINGTON

April 17, 1935.

STATEMENT OF PROBABLE CAUSE CONCERNING AN AIRCRAFT ACCIDENT
WHICH OCCURRED TO PLANE OF AMERICAN AIR LINES, INCORPORATED
ON DECEMBER 22, 1934 NEAR SUNBRIGHT, TENNESSEE

To the Secretary of Commerce:

On December 22, 1934 at about 3:45 a.m. near Sunbright, Tennessee, an airplane, being used in scheduled flight carrying mail and express, crashed with resultant death to the pilot and the complete destruction of the aircraft and cargo.

The pilot, Russell S. Riggs, held a Department of Commerce transport pilot's license and had a scheduled air transport rating. The plane, owned and operated by the American Air Lines, was a Lockheed Orion, model 9-D, and bore Department of Commerce license number NC-12286. This was a mail and express schedule and passengers were not permitted to be carried.

The plane was being flown between Cleveland, Ohio and Fort Worth, Texas. The pilot had departed from Louisville, Kentucky for Nashville, Tennessee, the next scheduled stop, at about 2:40 a.m. He was contacted by radio about twelve minutes after his departure and gave his position as twenty miles southwest of Louisville, following the Nashville radio beam and flying over top of the clouds at an altitude of 6,000 feet. For some reason, no further radio contacts could be made. The plane was found the following day near Sunbright, Tennessee, completely wrecked and burned.

There were no witnesses to the accident. Marks on the ground indicated that the pilot was flying in a southeast direction and had no idea of his proximity to the mountain on which he crashed. The ground at this point was 2850 feet above sea level, which would indicate that the pilot was letting down through the clouds to check his location, most likely thinking that he was on course and in the vicinity of the airport. Actually, however, he was 110 miles to the east of the airport and, from the elapsed flying time, must have flown an approximate straight line course from Louisville to where the accident occurred. Riggs was an experienced instrument pilot and why, with radio beacon facilities, he missed his course by 34° will probably never be known. There was nothing to indicate mechanical or structural failure of the airplane or engine.

Available evidence concerning this accident is so meager that any conclusions as to the probable cause must remain a matter of conjecture. Several theories are suggested but the fact that no radio contacts were made with any station after the first twelve minutes after take-off discounts most of them. A failure in the battery-generator system offers an explanation for entire flight sequence as would no other theory. It is almost certain that the ship's radio went out of commission. After the first radio contact, nothing more was heard from the pilot and it is only reasonable to assume that the pilot would have made and received some calls, had his radio been functioning. Also, had the pilot been able to receive the radio directional beam signals, he would have known through the weakness or lack of

these signals that he was a long way from the radio station marking the airport, or any other radio station. The directness of his flight indicates that he was flying the airplane on a definite course. This course proved to be approximately 34° east of the course he should have been following. Had he been able to intercept any radio signals, a man of his experience would have known something was wrong with his course and would have lost some time in orienting himself to his correct course. With this particular system, other pilots have found that with battery failure or failure of the wire carrying the current from the generator to the battery, the generator, too, usually fails. Failure of the generator would throw the compass off 30° to 50° which might easily account for the erroneous course followed by the pilot.

It is the opinion of the Accident Board that the lack of evidence makes any definite conclusions as to the probable cause of this accident a matter of conjecture. The most logical assumption appears to be that the battery-generator system failed, thus causing an error in the ship's compass and probably affecting other essential navigation instruments.

Respectfully submitted,

Eugene L. Vidal,
Director of Air Commerce.