FOR IMMEDIATE USE January 8, 1935 1

DEPARTMENT OF COMMERCE
BUREAU OF AIR COMMERCE
Washington

8/7/34

STATEMENT OF PROBABLE CAUSE
CONCERNING AN AIRCRAFT ACCIDENT
WHICH OCCURRED TO A PLANE OF NORTHWEST AIRLINES
ON AUGUST 7, 1934 AT MILWAUKEE, WISCONSIN

To the Secretary of Commerce:

On August 7, 1934 at about 11:56 p.m., at Milwaukee, Wisconsin, an airplane of United States registry, piloted by a liconsed airman, while being operated in scheduled flight, carrying passengers and, by special request, one pouch of mail, crashed with resultant serious injuries to the crew and several passengers and the complete destruction of the aircraft.

The plane, a Lockheed Electra, model 10-A, bearing Department of Commerce license number NC-14243, was being operated between St. Paul, Minnesota, and Chicago, Illinois by Northwest Airlines, Incorporated. The pilot, Joseph Ohrbeck, held Department of Commerce transport pilot's liconse No. 2233 and a scheduled air transport rating. The co-pilot, John Woodhead, held Department of Commerce transport pilot's license No. 22344. The pay passengers carried were: George Merkos, Frank Cooper, Donald Couture, Les Edge, William R. P. Clark and A. G. Callahan. Another passenger, G. Boe, was an employee of the company.

This trip was scheduled to leave at 8 p.m. However, due to delay, the actual takeoff from St. Paul was made at 9:25 p.m. One stop was made at Minneapolis and the plane arrived at Milwaukee, Wisconsin, at 11:45 p.m. with a total flying time of 2¼ hours.

The pilot states that the plane's two fuel tanks were filled to capacity (100 gal. each) at the start of the flight. For the first 1¼ hours of flying the selector valve was set so that fuel could be used from both tanks, simultaneously. At the end of this period, however, his gauges indicated a full left tank and a 5/8-full right tank. He then changed the selector valve to left tank only and the remaining hour of flying was done on this tank. After landing at Milwaukee, his fuel gauges indicated a 5/8 full right tank and a 1/2 full left tank.

The takeoff from Milwaukee was made using the left fuel tank only. When at an altitude of about twenty feet, the fuel warning lights came on and the left engine stopped. The pilot immediately switched the fuel valve to feed from both tanks and the co-pilot used the wobble pump. The plane settled to the ground with enough force to blow the right tire and break the right hub and wheel structure. At the time of impact, the left engine started again and, under power of both engines, the plane rose to an altitude of fifty to seventy-five feet. At this time, the right engine stopped, throwing the plane slightly to the right. The pilot immediately switched back to the left tank and the co-pilot continued to use the wobble pump but did not feel that any fuel was getting through. As the plane started to settle, the left engine slowly lost

speed and the plane slid off on the right wing and nose, cartwheeling some seventy-five feet and coming to rest in an upright position.

From our investigation and public hearing, it appears that the airplane had just recently been received from the factory and had been put into service without anyone having a definite knowledge of the amount of fuel it consumed per hour of normal flying. This trip was Pilot Ohrbeck's first flight in this particular plane, and he took off on the general assumption that its fuel consumption was about forty-three gallons per hour. Although the fuel gauge readings after 1¼ hours of flying (right tank 5/8 full; left tank full) indicated that something wasn't just right when fuel should have been draining from both tanks, the gauge readings after landing at Milwaukee (right tank 5/8 full; left tank 1/2 full) indicated a fuel consumption reasonably close to the general assumption of 43 gal. per hour.

However, an inspection of the fuel system after the accident disclosed that the right tank contained from fifty to sixty gallons of fuel and that the feed lines from this tank were full. The left tank was found to contain about one gallon and the feed lines were dry. Both carburetors contained a few drops of fuel. This indicated an actual fuel consumption of approximately 60 gal. per hour and although his left gauge indicated a tank one-half full, actually the tank was practically empty at time of takeoff from Milwaukee.

It is the opinion of the Accident Board that the probable causes of this accident were:

1. Failure of the Supervisory Personnel to definitely determine the actual fuel consumption of a new airplane before placing it in scheduled operation.

2. Failure of the fuel gauge on the left tank to function accurately.

3. Pilot error for failing to attempt to use the right fuel tank after the instrument board warning light had indicated that the tank which he was using was about empty.

Respectfully submitted,

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Director of Air Commerce