

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

FOR RELEASE: 6:30 P.M., E.D.S.T., MAR. 20, 1975

ISSUED: March 20, 1975

Forwarded to:
Honorable Alexander P. Butterfield
Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-75-25 thru -27

The National Transportation Safety Board is investigating the Northwest Airlines, Inc., Boeing 727, N274US, aircraft crash which occurred near Thielle, New York, on December 1, 1974. The Board's continuing investigation has revealed that ice blocked the pitot heads.

A preliminary review of the evidence in this accident suggests the possibility that the crew concentrated on air data instrumentation to the exclusion of aircraft attitude indications. The timely use of the attitude information may have prevented the stall and subsequent crash.

About 5 minutes before the rapid descent, the flight data recorder (FDR) recorded aberrations in the airspeed trace. These aberrations were caused by the closure of the ram air inlet and the drain hole of the pitot mast. These aberrations were verified by wind-tunnel icing tests of a pitot mast and pneumatic tests of an altimeter and airspeed system. These tests produced airspeed/altitude traces similar to those recorded on the FDR.

The Safety Board is aware of other incidents in which an aircraft encountered difficulties while flying in freezing precipitation because of a lack of pitot heat. In these incidents, the flightcrews recognized the problem and took corrective action.

Evidence in this case indicates that the pitot heater control switches were not on, although the heaters were capable of operation. The aircraft had been flying in clouds and freezing temperatures.


Recently, one air carrier reported that it is operating its pitot heater system continuously and the failure rate is minimal, i.e., one element failure per aircraft per year. Several other air carriers are actively considering the institution of a similar procedure, and they believe there would be no adverse affect on the life of the pitot heater elements.

The National Transportation Safety Board believes that corrective action is necessary and recommends that the Federal Aviation Administration:

1. Issue an Operations Bulletin to all air carrier and general aviation inspectors to stress the need for pilots to use attitude information when questionable information is presented on instruments that are dependent on the air data system. The information in this Bulletin should be disseminated to all operators for incorporation into their operations procedures and training programs. (Class 1)
2. Issue an Airworthiness Directive to require that a warning system be installed on transport category aircraft which will indicate, by way of a warning light, when the flight instrument pitot heating system is not operating. The warning light should operate directly from the heater electrical current. (Class 2)
3. Amend the applicable Federal Air Regulations to require the pitot heating system to be on any time electrical power is applied to an aircraft. This should also be incorporated in the operator's operations manual. (Class 2)

Our staff is available to assist your personnel in this matter, if desired.

REED, Chairman, McADAMS, THAYER, BURGESS, AND HALEY, Members, concurred in the above recommendations.


By: John H. Reed
Chairman

THESE RECOMMENDATIONS WILL BE RELEASED TO THE PUBLIC ON THE DATE SHOWN ABOVE. NO PUBLIC DISSEMINATION OF THIS DOCUMENT SHOULD BE MADE PRIOR TO THAT DATE.