

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: February 24, 1981

Forwarded to:

Mr. Charles E. Weithoner
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-81-14

On December 28, 1978, United Air Lines Flight 173, a DC-8-61 aircraft, crashed as a result of fuel exhaustion near the Portland International Airport, Portland, Oregon, after holding in the vicinity of the airport for approximately 1 hour while the flightcrew attempted to resolve landing gear problems. Of the 181 passengers and 8 crewmembers aboard, 8 passengers and 2 crewmembers were killed, and 21 passengers and 2 crewmembers were injured seriously.

On October 20, 1979, a Pan American Airways Boeing 747 declared an inflight emergency because of a low fuel state. The investigation revealed an error in the aircraft's fuel quantity gages which indicated more fuel than the fuel tanks actually contained. Although the error was within the manufacturer's allowable tolerances, it contributed to the crew's failure to declare an emergency fuel situation earlier in the flight.

The Safety Board is concerned that the pilot-in-command of the DC-8-61 aircraft did not have guidance information for a minimum allowable amount of fuel with which to begin the approach/landing. The Safety Board believes that minimum fuel quantities below which landing should not be delayed should be specified for all aircraft that are operated under 14 CFR 121 and 14 CFR 135. Moreover, the Board believes that allowances for fuel quantity measuring system tolerances should be considered in making a minimum approach/landing fuel determination.

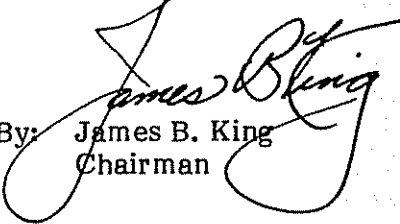
The Safety Board has learned informally that United Air Lines, recognizing a need for the foregoing guidance, has worked with the Boeing Company and McDonnell Douglas Corporation to incorporate into its aircraft flight manuals fuel limitations and specifications, including the minimum fuel quantity required for an approach and go-around.

The National Transportation Safety Board fully supports this United Air Lines effort in the interest of aviation safety. The Safety Board believes that the operational deficiencies associated with a lack of guidance on fuel minimums and fuel quantity measurement system tolerances can be eliminated by an industrywide implementation of procedures similar to the United Air Lines program.

Accordingly, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Amend 14 CFR 121 and 14 CFR 135 to require that all air carrier operators include in their flight operations manuals minimum operational fuel requirements for their aircraft, including fuel quantities below which a landing should not be delayed. In determining minimum fuel quantities, allowances should be made for fuel quantity measuring system tolerances and for the possibility of a missed approach. (Class II, Priority Action) (A-81-14)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.


By: James B. King
Chairman