

# NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

Corrected Copy

ISSUED: March 30, 1981

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Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-81-39 through -42

On January 20, 1981, at 1127 p.s.t., a Beech B-99, N390CA, operated by Cascade Airways, Inc., as Flight 201, crashed about 4.5 miles southwest of Spokane International Airport, Spokane, Washington. The accident occurred while the pilot was attempting a localizer approach to runway 3 (LOC Rwy 3) at Spokane International Airport. The two pilots and five passengers died in the accident; two passengers survived with serious injuries. The aircraft was destroyed by impact and postcrash fire.

The Spokane VORTAC (115.5, GEG, Channel 102) was used for the inbound routing of Flight 201 and is used for the distance measuring equipment (DME) arc for a LOC Rwy 3 approach. Upon arrival in the Spokane area, the flight was vectored for an instrument landing system (ILS) approach to runway 21. However, before the flight began the approach to runway 21, the tower changed the active runway to runway 3 and vectored Flight 201 for the LOC Rwy 3 approach. This approach utilizes the IOLJ localizer (109.9) and collocated DME (Channel 36), both of which are located on the airport.

While Flight 201 was initially being vectored for the LOC Rwy 3 approach, the IOLJ localizer and its associated DME were not operational because the Rwy 21 ILS was still being used by other arriving aircraft. An interlock switch in the tower prevents simultaneous operation of these two facilities. The IOLJ localizer/DME were turned on about 1124:08. About this same time, Flight 201 was advised that the aircraft was "6 miles from OLAKE intersection, cleared for the approach." Shortly thereafter, Flight 201 was advised to contact the tower and Flight 201 acknowledged. No other calls were received from the aircraft.

The normal procedure for the LOC Rwy 3 approach allows descent to minimum descent altitude (MDA) (2,760 ft) after passing OLAKE intersection, which is 4.2 miles from IOLJ. Without the airport environment in sight, a missed approach would be executed at 0.2 DME before reaching IOLJ. Although the investigation of the Cascade Airways accident is continuing, one theory being examined is that Flight 201 may have mistakenly initiated an approach and let down prematurely using DME mileage from the

Spokane (GEG) facility rather than the mileage from the localizer facility depicted on the LOC Rwy 3 approach chart. Investigators conducting the Safety Board's continuing investigation have interviewed five pilots, including airline and military crews, who have mistakenly commenced the LOC Rwy 3 approach using distance information from the Spokane DME instead of the IOLJ DME. If an approach was continued using the wrong DME (Spokane VORTAC), the aircraft would descend prematurely to MDA and could strike the terrain near the Spokane VORTAC, which is at approximately the same elevation as MDA. Flight 201's initial impact point was about 1,300 ft south-southeast of the Spokane VORTAC.

The Safety Board is aware that similar approach configurations exist at other airports throughout the United States where there are two DME facilities located near the localizer course, increasing the possibility that a tuning error could result in improper descent to terrain. Incident reports have been received from the NASA-sponsored Aviation Safety Reporting System Office describing similar occurrences where confusion existed at other airports with respect to proper distances from approach navigational aids.

The Safety Board has learned that the United States Air Force is considering the addition of a precautionary note in its instrument training manual (AFM 51-37) as well as publishing an All Command Safety Communication (ALSAFCOM) alerting pilots to the hazard of transition to an approach using one DME while another DME is associated with the final approach course.

The Safety Board believes this type of navigational aid configuration constitutes a hazard that must be corrected immediately. Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Publish a Notice to Airman pertaining to the localizer approach to runway 3 at Spokane International Airport, Spokane, Washington, emphasizing the need to use the IOLJ distance measuring equipment once established on the final approach course to runway 3. (Class I, Urgent Action) (A-81-39)

Add a precautionary note in the plan view section of the chart for a localizer approach to runway 3 at Spokane International Airport, Spokane, Washington, such as:

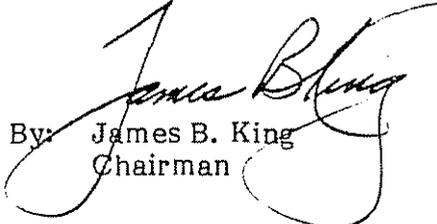
CAUTION

Use 109.9 IOLJ DME (Channel 36)  
For Final Approach Course  
Distance Information  
(Class 1, Urgent Action) (A-81-40)

Review all approach procedures and identify those airports that have a localizer or instrument landing system approach with distance measuring equipment facilities at two points along the final approach course, leading to the possibility of erroneous tuning, and add a precautionary note on the pertinent approach chart. (Class II, Priority Action) (A-81-41)

Alert pilots of the potential for error in making approaches at airports equipped with distance measuring equipment at two points along the final approach course through publication of appropriate precautionary information in the Airman's Information Manual. (Class II, Priority Action) (A-81-42)

KING, Chairman, DRIVER, Vice Chairman, and McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations.

  
By: James B. King  
Chairman