

(b) Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was a display of misleading navigational information concerning the flight's progress along the localizer course which resulted in a premature descent below obstacle clearance altitude. The origin or nature of the misleading navigational information could not be determined. The Board further concludes that the crew did not use all available navigational aids to check the flight's progress along the localizer nor were these aids required to be used. The crew also did not perform the required audio identification of the pertinent navigational facilities.

3. RECOMMENDATIONS

Shortly after this accident, the FAA installed Distance Measuring Equipment (DME) at the Juneau Airport. Following the commissioning of this equipment, the Board recommended (A-72-14) that the FAA:

"Amend the public instrument approach procedure for the LDA approach to Juneau, Alaska, Airport to reflect the addition of DME as a means of determining the location of fixes on the final approach course of the localizer."

This action has been approved by the Administrator and the appropriate charts now incorporate data concerning the DME distances associated with the localizer.

During this investigation the Board became aware of the possible existence of undesirable harmonics on the Sisters Island Doppler VOR signal and the signals of other similar DVCR installations. It is possible that this type of harmonic may have an adverse effect on VEF navigation receivers presently in use and in a manner not visualized in the original design. While the Board realizes that the tests conducted to date concerning extraneous harmonics are, by far, not conclusive, it is believed that the entire spectrum of receiver compatibility with the Doppler VOR signal warrants more study and research.

The Board, therefore, recommends that:

The FAA continue the tests now in process concerning extraneous harmonics on the Doppler signal and initiate research into their possible hazardous effects on navigation receivers and associated instrument displays. (A-72-205)