

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: August 17, 1978

Forwarded to:

Honorable Langhorne M. Bond  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-78-63 through -65

On May 19, 1978, at Martinsville, Virginia, a Piper PA-31 Navajo Chieftan was substantially damaged when it ran off the end of the runway and over an embankment after an aborted takeoff. An elevator cable became caught on the edge of a fuselage bulkhead lightning hole during the takeoff roll and prevented the pilot from moving the elevators and rotating the airplane for liftoff.

The elevator control cables on the Piper Navajo Chieftan are connected to turnbuckles which pass through the lightning hole at fuselage station 87.50. The elevator cable contacted the edge of the hole at this cable-turnbuckle juncture. The contact was probably made when the control column was moved aft, since this slackens the elevator down cable and reduces the clearance between the cable and the edge of the hole. In addition, there was evidence of rubbing between an elevator cable and a hydraulic line located just aft of this fuselage station.

FAA maintenance personnel inspected several other Piper Navajo Chieftan airplanes; when the control columns on these aircraft were pulled back rapidly, the elevator down cable at the turnbuckle juncture could be heard striking the edge of the lightning hole.

In view of the above, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Issue an Airworthiness Directive applicable to Piper PA-31 Navajo Chieftan aircraft requiring corrective action, such as a plastic guard around the lightning hole at fuselage station 87.50, to prevent elevator control cable interference. (Class I Urgent Action) (A-78-63)

Evaluate the adequacy of current Piper PA-31 Navajo Chieftan service information and maintenance procedures employed in connection with the rigging and adjustment of elevator controls. Include any necessary data on elevator cable tension-temperature compensation in the Navajo Chieftan Service Manual. (Class I Urgent Action) (A-78-64)

Evaluate the engineering feasibility on Piper Navajo Chieftan airplanes of: Increasing the elevator control cable tension; increasing the size of the lightning hole at fuselage station 87.50; and covering or relocating the elevator control cable turnbuckles. (Class II Priority Action) (A-78-65)

KING, Chairman, McADAMS, HOGUE, and DRIVER, Members, concurred in the above recommendations.

By: James B. King  
Chairman

