

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: January 10, 1980

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-80-3 and-4

On May 30, 1979, a Tennessee Airways Cessna 402, N87280, being operated as an air taxi, was in cruising flight when the pilot felt a "shudder" in the airframe. He reduced power and as the airspeed slowed to 110 mph the shudder stopped. The pilot diverted the flight to Shelbyville, North Carolina, and during the landing approach, with the landing gear down and full flaps extended, the shudder began again at 95 mph and continued throughout the landing. Examination of the aircraft revealed that the elevator trim tab actuator jackscrew, Part Number 1260074-4, could be moved in and out without rotating it.

The trim tab actuator assembly was taken to Cessna Aircraft Company, Wichita, Kansas, and examined. Examination revealed that the jackscrew o-ring packing had deteriorated and the jackscrew threads were rusted and badly worn because of a lack of lubrication.

The Service Manual requires a trim tab "free play" inspection every 100 hours. However, the condition of the packing is not ascertained during this inspection procedure. The interval between actuator lubrication is 1,500 hours; this long interval is adequate only if the packing remains in good condition. Examination of the aircraft records indicated that the total aircraft time was 2,042 hours. The Safety Board could not determine when the actuator was last lubricated.

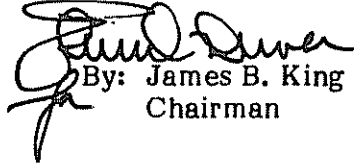
A check of service difficulty records showed four other possible cases of this type of distress on Cessna model 402 aircraft. In addition, the Safety Board understands that similar actuators are used in the aileron and rudder systems on this aircraft and on other Cessna aircraft.

Since a divergent tail flutter with subsequent aircraft damage can be caused by a free tab, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Inform all operators about the possibility and effects of a deteriorated o-ring packing on trim tab actuators on Cessna aircraft in General Aviation Airworthiness Alerts, Advisory Circular 43-16. (Class II, Priority Action) (A-80-3)

Review the present inspection criteria for inspection and lubrication of the elevator trim tab actuators and other similar actuators on Cessna 402's and prescribe more stringent criteria if they are not adequate to prevent failure of the actuator due to corrosion or inadequate lubrication. (Class II, Priority Action) (A-80-4)

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

  
By: James B. King  
Chairman