

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: May 7, 1980

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-80-35

The National Transportation Safety Board's investigation of an incident involving a Piper model PA-31-350, N59911, at Washington National Airport, Washington, D.C., on September 19, 1978, and subsequent monitoring of pertinent Service Difficulty Reports indicate that corrective action is necessary to reduce the possibility of similar occurrences.

Immediately after receiving clearance to taxi out for a scheduled flight to Elmira, New York, the captain of Commuter Airlines Flight 551 taxied forward a short distance for a brake check. Upon brake application, the nose wheel failed and then cocked against the gear fork assembly. This resulted in damage to the gear retract mechanism and subsequent collapse of the nose gear assembly.

Investigation revealed that the nose wheel, Cleveland P/N 40-76B, had failed in fatigue. The fatigue began from multiple origins adjacent to the holes of three bolts which hold the rim to the wheel. The fatigue area covered about 50 percent of the fracture surface and propagated circumferentially from the multiple origins. Maintenance records indicated that the nose wheel had been disassembled and visually inspected 8.9 operating hours before the failure.

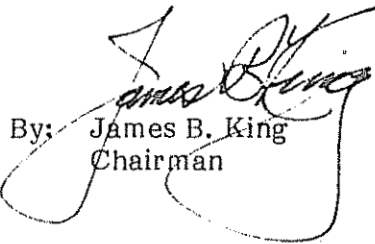
A survey of the FAA Maintenance Analysis Center Records indicated that 36 cracked or failed nose wheel assemblies have been reported over the last 5 years. Six of the reported cases involved the Cleveland P/N 40-120A wheel installed on Piper PA-31T model aircraft; the remaining reports involved the Cleveland P/N 40-76B wheel installed on various models of the PA-31 series aircraft.

We recognize that the Federal Aviation Administration has been active in alerting owners and operators of cracks in Cleveland P/N 40-76B wheels installed on Piper PA-31-300 model aircraft and that the information was discussed in the August 1977 issue of FAA's General Aviation Inspection Aids Summary.

On May 9, 1979, Airworthiness Directive 78-12-06 was issued which required a visual inspection of Piper Model PA-31T aircraft nose wheel assemblies, Cleveland P/N 40-120A (Piper P/N 551-778), before each flight. This inspection may be accomplished by the pilot. However, the possibility of a nose wheel failure on other Piper PA-31 series aircraft equipped with the P/N 40-76B nose wheel continues to exist. Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Amend Airworthiness Directive 78-12-06 to require periodic nondestructive inspections of Cleveland P/N 40-76B and P/N 40-120A nose wheels on Piper model PA-31 aircraft. (Class II, Priority Action) (A-80-35)

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

By: 
James B. King
Chairman

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