

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: April 11, 1977

Forwarded to:

Honorable John L. McLucas
Administrator
Federal Aviation Administration
Washington, D.C. 20591

} SAFETY RECOMMENDATION(S)

} A-77-14 and 15

On February 22, 1977, Piper 31, N9145Y, was destroyed and five people were killed during an in-flight breakup near Springdale, Arkansas. The National Transportation Safety Board's inspection of the wreckage revealed discrepancies in the installation of two of the three balance weights on each elevator.

In 1970, Nayak wing luggage lockers were installed on the aircraft, according to a design approved under STC SA-986SW. The installation required decreasing the elevator hinge moment to 96.4 in-lb. by adding about 1/2 lb. to each elevator horn. The cylindrical weights were added by bolting them to the nose channel and retaining the bolt with a rivnut. A recess had been machined into the weight in order to allow the weight to fit flush with the nose channel. Apparently, the recess was too deep, and when the bolt was tightened the rivnut was partially pulled through the sheet metal. Vibration worked the four weights loose, one of which had separated. The aircraft had about 3,200 service-hours.

The National Transportation Safety Board is concerned that other aircraft modified according to STC SA-986SW may experience similar balance weight retention failures which could lead to an elevator failure.

Accordingly, the National Transportation Safety Board recommends that the Federal Aviation Administration:

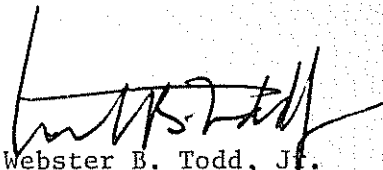
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Issue an Airworthiness Directive to all operators of aircraft having the Nayak wing luggage lockers installed under STC SA-986SW to require an immediate inspection of the elevator balance weights installation. (Class I--Urgent Followup) (A-77-14)

Review the design of the balance weight bolt retention installation and insure its adequacy. (Class II--Priority Followup) (A-77-15)

TODD, Chairman, BAILEY, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations. HALEY, Member, did not participate.


By: Webster B. Todd, Jr.
Chairman

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