



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

Date: February 11, 1986  
In reply refer to: A-86-13

Honorable Donald D. Engen  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

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On July 1, 1984, a Piper PA-34-200, N4886T, registered to Calypso Equipment, Inc., of Stuart, Florida, landed on turf adjacent to runway 19 at Hickory Municipal Airport, Hickory, North Carolina, with the nose landing gear in the up position and with both main landing gear down. N4886T was substantially damaged when its nose contacted uneven terrain and a taxiway. The pilot and three passengers aboard were not injured.

The pilot stated that there was no indication of a problem until he attempted to lower the landing gear for landing at Banner Elk, North Carolina. After placing the gear handle to the down position, the "gear unsafe" warning horn sounded, and he got an unsafe nose gear indication; also, the hydraulic pump continued to operate. He recycled the landing gear several times without correcting the problem and then flew to Hickory where maintenance assistance was available. He flew by the control tower with the landing gear extended, and the tower controller confirmed that the nose gear was not extended. The controller gave the pilot of N4886T the option of landing on runway 19 or on the turf on the left side of the runway. The pilot elected to land on the turf. N4886T skidded 1,000 to 1,500 feet before contacting the uneven terrain and taxiway and coming to a stop. The airplane was damaged substantially.

The postaccident examination of the aircraft revealed that the nose landing gear would not extend because the bolt which secured the nose gear centering spring assembly was installed improperly; this improper installation prevented proper operation of the nose gear door linkage. An AN 4-12 bolt was installed with the bolthead up and was secured by a castellated nut and cotter key. The PA-34 Maintenance Manual indicates that the correct bolt, an AN 24-20A, should be installed with the bolthead down and with an MS20364-428C locknut. The airplane's maintenance records disclosed that an annual inspection was completed 20 operating hours (9 gear cycles) before the accident and that the bolt and bushings on the nose gear steering dampener were replaced at that time.

Since the accident at the Hickory Municipal Airport, there have been two other incidents in which the nose gear did not extend on PA-34-200 airplanes because of the improper installation of the bolt in the nose landing gear centering spring at the nose gear connection. The other incidents were at Houston, Texas, on September 6, 1984, and Helena, Montana, on July 31, 1985.

Piper Service Letter 852, dated September 14, 1978, addressed the potential improper installation of the bolt in the nose landing gear centering spring and announced the availability of a placard that can be installed on the nose gear to remind mechanics of the proper method of installing the bolt. The service letter notes that when the bolt is installed incorrectly, nose gear extension can be restricted by the nose gear door mechanism. The placard mentioned in the service letter had not been installed on N4886T.

The Piper Aircraft Corporation reported that the PA-34-200 (Seneca I) model has been out of production since 1978. All PA-34-200 (Seneca II) aircraft from Serial No. 7870100 and all PA-34-220 (Seneca III) aircraft had the placard referenced in Service Letter 852 installed at the factory during assembly of the airplane. Piper reports that although the nose gear assemblies on the Seneca I, II, and III models are identical, and a production change has been made to reduce the likelihood of the nose gear centering spring bolt being installed improperly in the Seneca II and III aircraft that were produced after publication of the service letter, no action other than that recommended in the nonmandatory service letter has been taken regarding the problem in the Seneca I and early Seneca II airplanes.

Installation of a placard in compliance with the provisions of Piper Service Letter 852 would be inexpensive compared with the costly repairs related to a gear-up landing--the owner of N4886T, for example, estimated his repair cost at \$24,000. Also, nose gear-up landings can present serious hazards to occupants of the airplane.

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

Issue an Airworthiness Directive to require that the placard concerning the proper installation of the nose gear centering spring bolt on Piper PA-34-200 airplanes, as addressed in Piper Service Letter 852, be installed in all Piper Model Seneca I and applicable Model Seneca II airplanes. (Class II, Priority Action) (A-86-13)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER, Member, concurred in this recommendation.

  
By: Jim Burnett  
Chairman