

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: May 11, 1977

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

SAFETY RECOMMENDATION(S)

A-77-23

On February 18, 1977, a Bell Model 206B helicopter, N14824, was involved in an accident in Atlanta, Georgia, when the main rotor hub trunnion failed. The helicopter had departed an aerial pickup station and was at an altitude of approximately 60 feet when witnesses saw parts separate from the helicopter's main rotor system. The helicopter struck the ground about 600 yards beyond the point of departure. The pilot was injured seriously, and the second crewmember, who was positioned in the right rear seat, was injured slightly.

The National Transportation Safety Board's investigation of the accident disclosed that the main rotor hub trunnion (P/N 206-011-113-1) had fractured and separated. The Safety Board analyzed the fractured trunnion at its metallurgical laboratory and found that the trunnion failed in fatigue, which had originated in the radius of the bearing journal as a result of machine grinding burns. The total time on this trunnion was 4,060.3 hours. The trunnion has an infinite service life provided it passes the prescribed magnetic particle inspection at 1,200 hour intervals. This particular trunnion had been inspected only 380 service hours before it fractured. However, the inspection failed to disclose evidence of a crack even though traces of proseal were found to be present in the crack during postaccident examination indicating that the crack had originated prior to the conduct of this inspection.

Subsequent to the investigation of this accident, the Safety Board was informed by the U.S. Army that they had recently experienced a similar failure of a trunnion on an OH-58, the Army designation for the Bell 206. Amplifying details regarding that failure have been withheld pending completion of the Army's investigation.

In view of the potentially catastrophic consequences associated with such a failure, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Issue an Airworthiness Directive to require an immediate one time magnetic particle inspection of all Bell main rotor hub trunnions P/N 206-011-113-1, in accordance with the Bell Helicopter published maintenance and overhaul procedures, to detect machining deficiencies, surface irregularities, and cracks. (Class I--Urgent Followup) (A-77-23)

TODD, Chairman, BAILEY, Vice Chairman, McADAMS, HOGUE, and HALEY, Members, concurred in the above recommendation.

  
By: Webster B. Todd, Jr.  
Chairman