

Log 1485

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: October 18, 1982

Forwarded to:

Honorable J. Lynn Helms
Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-82-137 through -139

On April 12, 1982, an Aerospatiale AS 350 helicopter experienced a loss of directional control during the final stages of approach to the McGee Tyson Airport, Alcoa, Tennessee. The helicopter was substantially damaged during the ensuing hard landing. One passenger received minor injuries.

Examination of the helicopter revealed that one of the five hanger bearings which support the tail rotor driveshaft had seized because of a lack of lubrication, resulting in the shearing of the driveshaft at the bearing location. The bearing, PN 6007-2RS1KT47CA, is prelubricated and sealed during manufacture; there is no means of lubricating the bearing during service. Further, the bearing has no life limit, and the existing maintenance procedures require a visual inspection at 300-hour intervals. The bearing in the accident helicopter had accumulated 729 operating hours since its installation; the bearing was last visually inspected 37 hours before the failure.

The helicopter manufacturer has indicated to Safety Board investigators that a similar shaft failure occurred in Canada about 5 months ago. As a result, the Canadian Department of Transportation issued a telegraphic message to all AS 350 helicopter operators in Canada requiring that the driveshaft bearings be inspected daily. The Safety Board is aware that on May 27, 1982, the manufacturer issued Service Bulletins 05.08 and 05.02 for all North American operators of AS 350 and AS 355 model helicopters. The bulletins recommend a 1,200-hour life limit for the bearings now installed and impose a detailed inspection of the tail rotor driveshaft hanger bearings within 50 flight hours. Further, these inspections are to be repeated at 300-hour intervals. The Safety Board commends the manufacturer for this prompt action. However, the Safety Board believes that the service bulletins should be made mandatory and that a more stringent inspection interval is required to ensure that bearing deterioration does not occur to the point of failure during operation.

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

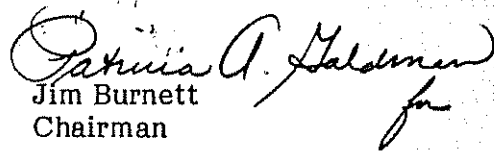
Issue an Airworthiness Directive applicable to the Aerospatiale AS 350 and AS 355 model helicopters to require that the 1,200-hour life limit and the detailed inspection of the tail rotor driveshaft bearings recommended in Aerospatiale Service Bulletin 05.08 (AS 350) and 05.02 (AS 355) be made mandatory. (Class II, Priority Action) (A-82-137)

Require that operators of the Aerospatiale AS 350 and AS 355 model helicopters perform a daily visual inspection of the tail rotor driveshaft bearings for proper condition. (Class II, Priority Action) (A-82-138)

Review and evaluate with the French regulatory agencies the need for replacing the sealed bearings, PN 6007-2RS1KT47CA, now installed on the Aerospatiale AS 350 and AS 355 model helicopters with a bearing that can be lubricated periodically and take appropriate action as necessary. (Class III, Longer Term Action) (A-82-139)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS, BURSLEY, and ENGEN, Members, concurred in these recommendations.

By: Jim Burnett
Chairman

A handwritten signature in cursive script, appearing to read "Patricia A. Madsen", with a small flourish at the end.