

UNITED STATES OF AMERICA  
NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: September 27, 1972

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD  
at its office in Washington, D. C.  
on the 13th day of September 1972

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FORWARDED TO: )  
Honorable John H. Shaffer )  
Administrator )  
Federal Aviation Administration )  
Washington, D. C. 20591 )  
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SAFETY RECOMMENDATIONS A-72-168 & 169

The National Transportation Safety Board is investigating a fatal accident involving a Brantly Model B-2-B helicopter, N2254U, which crashed on August 15, 1972, while on a local pleasure flight. Two of the three main rotor blades separated shortly after takeoff from the Duxbury, Massachusetts, airport and the aircraft crashed out of control. The pilot and passenger sustained fatal injuries.

Examination of the failed main rotor blade assembly revealed a fatigue failure within the threaded area of the pylon outboard bearing shaft. The fatigue fracture propagated through approximately 85 percent of the cross-section area of the tubular shaft prior to final separation.

The shaft, P/N 280-6, S/N 1564, had a total service time of 1,667 hours as recorded on the aircraft's elapsed time meter. The service life of this part is 2,500 hours. Presently, there is no maintenance requirement to inspect the shaft prior to its normal retirement from service. The aircraft log books and maintenance records for this aircraft have not been found to date.

Our metallurgical examination revealed that the hardness of the shaft was below the hardness range specified on the Brantly drawing. These hardness tests indicate that the strength level of the material was approximately 20,000 pounds per square inch below the drawing requirements.

Therefore, since this condition may exist on other shafts manufactured in the same manner, the National Transportation Safety Board recommends that the Federal Aviation Administration:

1. Require an immediate inspection of all Brantly Model B-2 series helicopter pylon outboard bearing shafts for evidence of cracks.
2. Require that each pylon outboard bearing shaft be hardness tested to verify conformity with the proper hardness specification.

Personnel from our Bureau of Aviation Safety have been in contact with your Flight Standards representatives and will be made available if any further information or assistance is desired.

These recommendations will be released to the public on the issue date shown above. No public dissemination of the contents should be made prior to that date.

Reed, Chairman, McAdams, Thayer, Burgess and Haley, Members, concurred in the above recommendations.



By: John H. Reed  
Chairman

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