

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

ISSUED: November 16, 1972

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD  
at its office in Washington, D. C.  
on the 26th day of October 1972

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FORWARDED TO: )  
Honorable John H. Shaffer )  
Administrator )  
Federal Aviation Administration )  
Washington, D. C. 20591 )  
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SAFETY RECOMMENDATION A-72-207 & 208

The National Transportation Safety Board's investigation of a recent fatal accident involving a Beech 95, N738CB, indicates that some changes in Airworthiness Directive 68-19-4 (Hartzell) may be required to reduce the possibility of similar accidents in the future.

The accident occurred in Miami, Florida, on April 5, 1972, shortly after a routine takeoff. While the aircraft was in a shallow right climbing turn, one of the blades separated from the right propeller. A high-power setting was being used on both engines at the time of the blade separation. Immediately after the blade separation, fire was observed in the area of the right engine. The right engine and some of its associated parts separated from their mounts and were found away from the main wreckage.

Our investigation showed that the blade separation was caused by a fatigue fracture which occurred in the blade shank approximately 1 inch from the hub end of the blade. Fatigue cracking originated in the fillet of the blade-retention flange on the leading edge side of the blade. An area of corrosion damage, found at the fatigue-crack nucleus, probably contributed to the cause of the failure.

The propeller was a Hartzell Model HC-92ZK-2; the failed blade identification was Hartzell DWG No. 8447-12A, Serial No. A2366J, Test No. 64144. AD 68-19-4 requires an inspection for cracks in the shanks of certain types of blades installed on 20 models of Hartzell propellers with 2,000 hours or more time in service. Blades in which no cracks are

found are required to be shot peened in the shank area and then reinspected for cracks after every 1,000 hours of additional service time. This kind of inspection and shot peening might have prevented the N738CB accident, but the AD does not apply to Model HC-92ZK-2 propellers.

Hartzell Service Letter No. 61 (dated 5/9/69, revised 3/6/70), "Overhaul Periods for Various Propeller Models," recommends that Hartzell Model HC-92ZK propellers be overhauled at 1,000-hour intervals if the aircraft is parked outside, as was N738CB. The propeller that failed was last overhauled approximately 1,400 hours prior to the accident and had a total time of 2,700 hours.

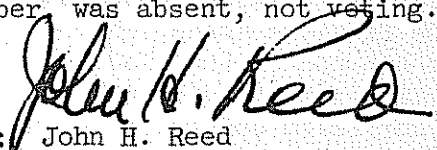
Thus, the Board believes that mandatory inspection for cracks and a requirement for shot peening of uncracked blades are necessary to prevent blade failures in Model HC-92ZK propellers, as well as those models now covered by AD 68-19-4. Since corrosion damage probably contributed to the cause of the fatigue failure of the blade on N738CB, the Board also believes that consideration should be given to including an inspection for corrosion damage in AD 68-19-4.

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

1. Amend Airworthiness Directive 68-19-4 to include Model HC-92ZK propellers.
2. Revise AD 68-19-4, paragraph C, to include an inspection for corrosion damage in the blade shank area.

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

Reed, Chairman, McAdams, Burgess, and Haley, Members, concurred in the above recommendations. Thayer, Member, was absent, not voting.

  
By: John H. Reed  
Chairman