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

ISSUED: April 25, 1973

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D. C.
on the 23rd day of April 1973

FORWARDED TO:)
Honorable Alexander P. Butterfield)
Administrator)
Federal Aviation Administration)
Washington, D. C. 20591)

SAFETY RECOMMENDATIONS A-73-16 thru 18

The National Transportation Safety Board's investigation of a recent fatal accident involving a Beechcraft Model 18, N310WA, indicates that a fatigue failure occurred in the elliptical lower cap of the right wingspar at wing station 81. The accident occurred on April 19, 1973, when the aircraft crashed during an approach to land at the Davenport, Iowa, airport. All of the six people aboard the aircraft were killed.

This is another in a long series of accidents, dating back to 1947, that have been caused by fatigue fractures in Beechcraft Model 18 wingspars. The Board's staff of investigators and metallurgists have worked closely with Federal Aviation Administration personnel for a considerable number of years on this problem. One of our investigators is currently working with the FAA and Beech personnel at the Beech factory in Wichita, Kansas, where metallurgical and X-ray plate examinations are being conducted.

We wish to commend the FAA for their continued efforts to insure the airworthiness of Beech 18 aircraft. We believe that your efforts, which are reflected by the numerous AD's published on this problem, have prevented many accidents. The latest Airworthiness Directive (72-20-5, Beech) requires a visual, X-ray, and either a magnetic particle or dye penetrant inspection of the lower spar caps at numerous wing stations. We have examined several sets of X-rays taken on N310WA in accordance with this AD. Reexamination of these X-ray plates at the Beech factory has disclosed that there were detectable crack indications in the ultimate failure area dating back to July 7, 1971.

In view of the above, the Board urges the FAA to examine the recommendation for increased emphasis on the training and qualifications of radiograph interpreters which was made in the Board's report on the 1968 Wein Consolidated F27B accident at Pedro Bay, Alaska, with a view toward ultimate FAA certification and licensing of nondestructive inspection technicians.

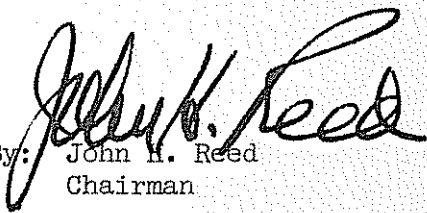
The Board believes, however, that the continuing catastrophic wing failure accidents and the present state of the art in nondestructive inspection make it unwise to continue to rely on the quality of presently required inspections to assure the airworthiness of these aircraft.

Therefore, the Board recommends that the Federal Aviation Administration:

1. Revise its existing system of surveillance and quality control of all inspections made under AD 72-20-5 to insure the continued airworthiness of these aircraft.
2. Consider a requirement for the incorporation of one of several approved and available kits to reinforce the wingspars on all Beech Model 18 aircraft, which would exempt them from further inspection, if the FAA is unable to implement effectively Recommendation No. 1.
3. Promulgate an advance Notice of Proposed Rule Making soliciting industry views on the practicability of licensing aircraft radiographic technicians.

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


By: John H. Reed
Chairman