

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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(202) 426-8787

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Forwarded to:

Honorable John L. McLucas
Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-76-103 and 104

The Aircraft Owners and Pilots Association recently supplied to the National Transportation Safety Board a copy of a letter written by an AOPA member regarding corrosion on Cessna Models 300 and 400 series airplanes. This letter, as well as information obtained by the Safety Board during visits to several certificated repair stations, has disclosed a maintenance problem affecting the safety of these aircraft.

The wing structural areas in these airplanes aft of the engine nacelles--wing rear spars and flap wells--are particularly susceptible to corrosion because of chemical interaction with exhaust gases. Exhaust gases are either diverted or leaked into these areas because of the effects of airflow about the wing, particularly when the flaps are extended. In their Service Letter ME 73-23, Cessna indicated that inspection for corrosion and corrosion control is particularly important on the early Model 310's which utilized exhaust systems with augments and diffuser tubes.

The Safety Board found that, despite routine periodic maintenance inspections, corrosion in the above areas often was not detected or went uncorrected until major structural repair or replacement was required. For example, the Safety Board is aware of several cases in which the wing rear spar had to be replaced.

In addition to the problem of timely detection of corrosion, opinions among field maintenance personnel differ regarding the limitations to be applied to the repair of rear wing spars affected by such corrosion. Some of the questions and issues raised, for example, deal with the degree of corrosion which necessitates replacement rather than repair; the amount or thickness of spar structural material which can be safely removed; and reinforcement of repaired structure. One certificated

repair station cited the lack of technical guidelines for such repairs and replaces spars regardless of the amount of corrosion found. Other repair stations confronted with the same circumstances repair the structure routinely.

In view of the critical structural elements involved and the apparent need for clarification of certain field maintenance procedures, the Safety Board believes that an overall assessment should be made of the scope of this corrosion problem. Such an evaluation, including aircraft inspection sampling and discussions between FAA and field maintenance personnel, would provide a means of determining the need for additional technical or engineering guidelines to deal with critical corrosion problems of this kind.

In view of the above, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Conduct a directed safety investigation to determine the degree and criticality of corrosion affecting Cessna 300 and 400 series airplanes. (Class II--Priority Followup.)
(A-76-103)

Issue an Airworthiness Directive, if the results of the investigation so dictate, containing specific field maintenance guidelines to assure the timely detection and correction of any corrosion which may affect the rear spars of these airplanes. (Class II--Priority Followup.)
(A-76-104)

TODD, Chairman, McADAMS, HOGUE, BURGESS and HALEY, Members, concurred in the above recommendations.



By: Webster B. Todd, Jr.
Chairman

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.