



DEPARTMENT OF TRANSPORTATION
NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D. C. 20591

September 24, 1970

OFFICE OF
THE CHAIRMAN

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Honorable John H. Shaffer
Administrator
Federal Aviation Administration
Washington, D. C. 20590

Dear Mr. Shaffer:

This is in answer to your letter of June 29, 1970, regarding the DH-104 wing fitting failure problem. You indicate that the Board's recommendation was not based on technical adequacy.

The Board's recommendation (June 9) was based upon the following facts available to the Board:

1. A fatigue failure of the wing main spar lower fitting was found in the TAG Airlines De Havilland Dove aircraft involved in the accident;
2. TAG Airlines advised that another aircraft in their fleet had been found to have a crack in the right main spar lower fitting; and
3. TAG had grounded all its De Havilland Dove aircraft.

Based on the foregoing, we believe the Board's recommendation of June 9 was prudent, reasonable, technically adequate, and in the public interest.

Insofar as the release of this information by the Board to the press, we believe that also was in the public interest. There have been in the past, and there will be in the future, instances where the Board as a result of an accident investigation will find it necessary, because of its independent statutory safety responsibilities,

Honorable John H. Shaffer

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to immediately release certain information to the public. When such action involves your agency, we, of course, attempt to give you advance notice of the action we intend to take. In this case, we did contact your agency prior to the release of the recommendation. We regret that the public release caused some inconvenience to you; however, in the interest of public safety we feel our procedures were justified.

Sincerely yours,

A handwritten signature in cursive script that reads "John H. Reed". The signature is written in dark ink and is positioned above the typed name and title.

John H. Reed
Chairman



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OFFICE OF
THE CHAIRMAN

May 27, 1970

Honorable John H. Shaffer
Administrator
Federal Aviation Administration
Washington, D. C. 20590

Dear Mr. Shaffer:

The Board's initial investigation on January 28 to February 9, 1970, of the TAG Airlines De Havilland DH-104 accident in Lake Erie, on January 28, revealed that a 15-foot section of the outer right wing panel had come in contact with a rotating propeller while in flight.

The relatively undamaged right wing panel and approximately 90 percent of the severely ice impact-damaged left wing were the only major portions of the aircraft wreckage recovered at that time. The remainder of the wreckage penetrated the frozen lake surface in two locations, approximately 60 feet apart, and sank.

Due to the weather conditions and the heavy ice concentrations in the area, the U.S. Coast Guard advised the Board that it was too dangerous to personnel and equipment to attempt further recovery of the aircraft at that time.

Based on the recovered wreckage during the initial investigation, your engineering staff personnel, after discussions with the Safety Board's personnel, issued a precautionary telegraphic Airworthiness Directive pertaining to the engine mount framing and pickup fittings. This Airworthiness Directive revised and superseded Airworthiness Directives 55-20-1 and 65-20-2, which had pertained to the same subject.

On April 25, 1970, the Board reconvened the on-scene investigation since the weather and lake conditions were conducive for recovery operations. To date, we have recovered approximately 95 percent of the total aircraft wreckage.

Our investigation of the total wreckage recovered has revealed a failure which requires immediate corrective action. The examination of the right wing to fuselage joint fittings has revealed the presence of a fatigue failure. The fatigue failure involved the right main wing spar lower attachment fitting, P/N 4W.271. Fatigue cracks started on both the forward and aft edges of the bolt hole on the top side of

the fitting. On one side of the hole, the fatigue crack progressed almost completely through the fitting and on the opposite side, it had progressed through about 50 percent of the cross sectional area before the fitting failed completely.

We are aware of the number of Airworthiness Directives which have been issued previously pertaining to the main wing spar joint fittings, namely: AD-67-32-3, AD-61-11-3, and particularly AD-61-18-3, which is applicable to the failed part in this accident.

Our review of the Airworthiness Directive compliance data of TAG Airlines has indicated that AD-61-18-3 and AD-61-11-3, were complied with on November 10, 1965, at which time the aircraft had accumulated a total service time of 4,992 hours. The total service time on the aircraft at the time of the accident was 9,383:41 hours.

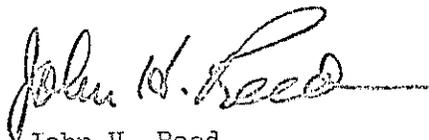
Our metallurgical examination of the failed parts is in progress and pending the results of this examination, further corrective action may be necessary, at which time we will advise you.

Based on the findings in this accident to date, the Safety Board recommends the following action:

1. Conduct a one-time inspection on an expedited basis by approved methods of all lower main wing spar fittings P/N 4W.271 on all De Havilland DH-104 and 105 aircraft to assure the structural integrity of the aircraft.
2. Review the adequacy of Airworthiness Directive 61-18-3 and revise as necessary to assure adequate service limits. Consideration should also be given to a reduction in the present inspection period of 9,970 hours as well as requiring repetitive inspection periods so as to establish an adequate service life.

Members of our Bureau of Aviation Safety staff have discussed these findings with members of your Engineering and Manufacturing Division, Flight Standards Service. If we can be of any further help in this matter, please feel free to contact us.

Sincerely yours,



John H. Reed
Chairman