STATEMENT OF ANTHONY J. BRODERICK, ASSOCIATE ADMINISTRATOR FOR REGULATION AND CERTIFICATION, FEDERAL AVIATION ADMINISTRATION, BEFORE THE SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION, CONCERNING THE FEDERAL AVIATION ADMINISTRATION'S RELATIONSHIP TO THE NATIONAL TRANSPORTATION SAFETY BOARD. MAY 27, 1993.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear before the Subcommittee today to discuss the relationship between the FAA and the NTSB concerning, in particular, the way in which FAA responds to safety recommendations proposed by the NTSB. I understand that the Subcommittee's interest in this area was heightened by the tragic accident on April 19 of a Mitsubishi MU-2B-60 aircraft in Dubuque, Iowa.

Any review of the FAA and NTSB relationship must, of course, consider the two agencies' missions. The NTSB was established by Congress to investigate accidents, make determinations of probable cause, and to make safety recommendations to the regulating agency. In 1974, Congress acted to make the NTSB an independent agency to help assure the independence of its accident findings and safety recommendations. FAA is charged by the Congress with the job of promoting the safety of our air transportation system through regulation, surveillance, and enforcement. One way that we fulfill our safety

responsibilities is through the opportunity to benefit from the NTSB accident findings and the recommendations they make to us. The U.S. aviation safety record, which continues to improve in all segments of air transportation, reflects the fact that concerns for the safety of our Nation's air travelers occupies the highest priority with both agencies.

In my current position, I have worked closely with NTSB officials for more than a decade. Today's working relationship is, in my view, a positive and constructive one. I firmly believe that we have as good a working relationship today as we have ever had with the NTSB. Recently, FAA Acting Administrator Del Balzo met with NTSB Chairman Vogt to discuss ways we could build on that relationship, and continue to improve interaction between the agencies.

We recognize that we benefit from many of the technical recommendations made by the NTSB, and we carefully weigh all safety information they provide. In fact, the historical record of FAA's response to NTSB recommendations shows the value we place in their input, with more than 80% of "closed" NTSB recommendations having been adopted. We have adopted more than 90% of their Class I (urgent) recommendations. Nevertheless, there are--as there should and will be--times when we differ on a particular course of action that should be taken by the FAA. Despite these differences, we are able to find common ground

more often than not, and the safety dialogue between the two agencies does advance the safety interest of the traveling public.

To ensure timeliness in responding to NTSB recommendations, we have established a process for tracking each recommendation. We have consistently met the 90 day requirement for initial response to an NTSB recommendation. We also continue to track and monitor the status of FAA review and action on each recommendation until final action is taken by the agency.

A recent review of our responses to NTSB recommendations shows that this control process is working well, with FAA actions needed to close out NTSB recommendations falling within the prescribed timeframes. More specifically, the DOT Inspector General found that, except in the case of the lowest priority recommendations (Class III (long term)) where we exceeded the 5 year timeline by an average of 6 months, the FAA's time to close out NTSB recommendations averaged less than the timeframe the NTSB assigns to each category. Class I recommendations call for close-out in 1 year; on average, it has taken FAA 7 months. Class II recommendations call for close-out within 2 years; FAA has averaged 22 months.

In view of the Subcommittee's expressed interest concerning the FAA's response to the NTSB Class II recommendation associated

with the Hartzell propeller, let me briefly touch on that subject.

On September 27, 1991, a Canadian-registered Mitsubishi aircraft, equipped with a Hartzell HC-B4 propeller, lost a propeller blade in flight. The aircraft sustained severe damage, but was able to land safely in Utica, New York.

NTSB subsequently wrote the FAA on August 13, 1992, making recommendations concerning the Hartzell propeller. In its letter, the NTSB indicated that it had found that loss of the propeller blade was the result of fatigue cracking that started from the inside surface of the propeller hub arm. The NTSB had found scratches inside this area, and believed that these scratches may have provided an origin point for the cracking, and that they may have resulted from the manufacturing process. Accordingly, the NTSB recommended that the FAA, with the assistance of Hartzell, develop a non-destructive inspection technique to detect the type of crack believed to have resulted in loss of the propeller. The NTSB recognized in its letter that an inspection that required disassembly of the propeller and pilot tube could result in damage to the hole wall. The development of a non-destructive inspection technique would be designed to permit the inspection with the pilot tube in place, to avoid this possible maintenance-induced problem. The NTSB

also recommended that FAA take action to require the inspection of Hartzell HC-B4 propeller blades with 3,000 or more hours, either at their next overhaul or annual inspection.

The FAA responded to the NTSB's August 1992 recommendations on October 26, 1992, advising the NTSB that we were reviewing the service history of the Hartzell propeller hubs to determine the magnitude of the problem. We also advised them that we were reviewing the service manuals to determine what changes, if any, needed to be made. Although we failed to include this information in our response to the NTSB, we had already begun discussions with Hartzell to seek to develop a non-destructive inspection technique for the propeller hub.

On January 4, 1993, we followed-up on our earlier response to the NTSB's recommendations. We informed them that, while we agreed with the intent of their recommendations, we did not believe that airworthiness directive action was necessary, at that time, to require the inspections NTSB had recommended. We also informed the NTSB that Hartzell Propeller analysis had shown that stress levels of the propeller area in question were acceptable, and that no metallurgical discrepancies were found in the hub material. We also said Hartzell would continue its investigation and would provide us with its findings. Further, FAA would continue to monitor the service history of the propeller hub design.

In response to our January 4 letter, the NTSB wrote the FAA on March 4, 1993, reiterating its view that an appropriate inspection technique, not requiring disassembly of the HC-B4 propeller pilot tube, be developed and applied. The NTSB also noted concern that the FAA had not seen a need to review the design and fabrication of other types of Hartzell propellers using the same type of hub design.

Although the correspondence between the agency and NTSB highlights the issues and some of the background, it does not fully depict our reasoning or the nature of the activities we had underway within the agency. Perhaps most important is the fact that, at the time of the Utica accident, there had been no other comparable Hartzell blade fractures for either that or any of the other similar hub designs despite three decades of use and some 60 million hours of service by 110,000 propeller hub arms.

One action we took was to review all the known service difficulty history on the Hartzell HC-B4 propeller hub design, which totals over 6,000 4-bladed propellers. We also contacted several propeller overhaul shops to gather data on any known cracking problems with this propeller design. Thousands of propeller hub pilot tubes had been pulled out during normal scheduled maintenance work, and not one crack had been reported in the hub arm failure area.

not possible with current technology. That remains the case today.

The effort to implement the intent of the NTSB recommendation, without introducing new airworthiness problems, was still ongoing when the Dubuque accident occurred on April 19, 1993. This tragic accident involved a Hartzell HC-B4 propeller of the type involved in the 1991 accident. The blade fracture appeared similar based on early investigation; the airplane was an identical model. For the first time, then, there was an indication that the earlier blade problem might have been other than an isolated aberration. Accordingly, on April 28, we issued an emergency AD requiring inspection of the inner surface of the propeller hubs with the pilot tube removed. The AD included the unusual requirement that the disassembly of the hub and inspection must be done at the Hartzell factory laboratory rather than at a certified repair facility. This extraordinary measure was taken in an attempt to minimize the possibility of maintenance-induced error, and maximize speed and consistency of data collection.

At this point, we still cannot account for the cause of the fractures. Engineering data does not indicate that the area of the fractures is subjected to stress loads that would be a likely cause. Analysis is on-going to revalidate the stress load data. Actual flight tests are also being conducted this

week. We continue to work with the NTSB on this issue, and are a participant in the accident investigation, which they oversee.

In closing, Mr. Chairman, I can assure you that we are working closely with the NTSB on this issue, and that we do so on other safety issues as well. We also are continuing our work with Hartzell.

That concludes my prepared statement, Mr. Chairman. I would be pleased to respond to any questions you may have at this time.

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