



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Yogt# 2201

Date: July 24, 1990

In reply refer to: A-90-110

Honorable James B. Busey
Administrator
Federal Aviation Administration
Washington D. C. 20591

On November 27, 1989, a Piper PA-46-350P Malibu Mirage, N919S, crashed into trees short of the runway on an ILS approach to the Des Moines International Airport, Iowa. The pilot and two passengers were seriously injured; the airplane was destroyed. The pilot reported that the engine lost power just as he broke out of an overcast and had the runway in sight.

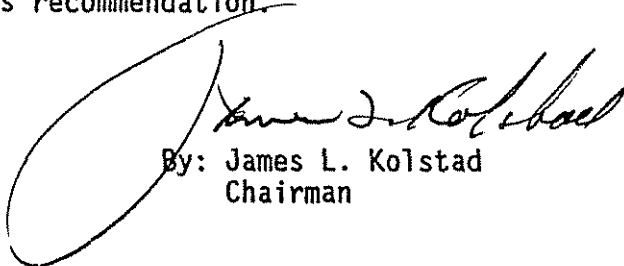
Examination of the Textron Lycoming TIO-540-AE2A engine by Safety Board investigators after the accident revealed that the power loss was the result of a separation at the engine's left turbocharger transition pipe flange and the wastegate transition mating flange. There was evidence of a carbon residue in the engine area adjacent to the separation but minimal heat damage. The two clamping bolts, PN LW-31SS-0.89, and the self-locking washers that connect the flanges were missing. The airplane was manufactured in September 1989 and had only accumulated about 65 hours flight time at the time of the accident.

Subsequent to the accident, the Safety Board was made aware of three other incidents of separation at the turbocharger-to-wastegate transition flanges. Reports indicated that in all three cases the engines suffered partial power losses, began running rough, and resulted in the pilots making precautionary landings. As a result of the accident and the reported incidents, the engine manufacturer issued Service Bulletin No. 491 recommending that the clamping bolts be inspected prior to further flight for damaged threads and proper torque. If damaged threads are found, the bolts must be replaced with new, longer bolts with lock nuts installed on the threads that protrude through the mating flange. The bolt replacement is recommended, in any case, at the next regularly scheduled maintenance event, not to exceed 50 hours of operation. The Safety Board believes that the recommendations in the service bulletin should be made mandatory to ensure the continued airworthiness of the Piper Malibu Mirage airplane with the Textron Lycoming TIO-540-AE2A engine installed.

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

Issue an airworthiness directive applicable to the Textron Lycoming TIO-540-AE2A engine to require, within a specified time, inspection and replacement, as necessary, of the existing clamping bolts for the left turbocharger transition pipe flange to the wastegate transition mating flange. Inspection, replacement with longer bolts, and proper torque values should be in accordance with the latest issue of Textron Lycoming Service Bulletin No. 491. (Class II, Priority Action) (A-90-110).

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, LAUBER and BURNETT, Members, concurred in this recommendation.



By: James L. Kolstad
Chairman