

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

ISSUED: July 5, 1972

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D. C.
on the 7th day of June 1972

FORWARDED TO:)
Honorable John H. Shaffer)
Administrator)
Federal Aviation Administration)
Washington, D. C. 20591)

SAFETY RECOMMENDATIONS A-72-82 & 83

The National Transportation Safety Board is investigating the engine failure incident which occurred near Tucson International Airport on May 2, 1972, involving a Continental Airlines McDonnell Douglas DC-10, N68041.

This engine failure, in the No. 2 position, resulted in an in-flight separation of that portion of the engine aft of the turbine midframe, allowing the 5-stage low-pressure turbine and the turbine reverser to separate from the aircraft. The incidental damage to the aircraft was relatively minor.

Teardown examination of the General Electric CF6-6D engine revealed that a stiffener ring on the pressure tube within the high-pressure turbine had failed and become dislocated in such a manner as to unbalance the turbine. It is believed that this condition contributed to the final failure of the "C" sump and the No. 5 bearing; it is further believed that the engine oil released from the failed sump ignited and the low-pressure turbine shaft failed as a result of the oil fire superheat and the vibrational stress.

The "C" sump has had a tendency to crack in service, and it is possible a similar massive engine failure could occur eventually as a result of this "C" sump weakness without the contributing input of the failed stiffener ring. Consequently, the Safety Board believes that preventive measures toward insuring against failure in both the sump and the ring areas are not only warranted but should be made mandatory.


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

1. Require that the provisions of GE Service Bulletin (CF6-6) 72-177, dated March 28, 1972, which recommended adding a sleeve tube to strengthen the high-pressure turbine pressure tube, be incorporated in all the affected CF6-6D engines at an early date.
2. Require "C" sump borescope inspection and engine oil consumption monitoring, similar to the procedures recommended in GE Alert Service Bulletin (CF6-6) A72-273, and require repetition and continuation according to experience, with attendant appropriate action, until an improved "C" sump assembly is provided by GE.

Our Bureau of Aviation Safety staff is available for consultation if desired.

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; Laurel, McAdams, Thayer, and Burgess, Members, concurred in the above recommendations.


By: John H. Reed
Chairman

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SAFETY BOARD
DEPARTMENT OF TRANSPORTATION
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