

Log 1584

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: April 5, 1983

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Forwarded to:

Honorable J. Lynn Helms  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-83-31 and -32

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On March 12, 1983, a Piper Seneca Model PA-34-200, N3480, crashed during takeoff from the Lake Texoma State Park Airport near Kingston, Oklahoma. Witnesses stated that the airplane rolled to the right immediately after liftoff and struck trees on the right side of the runway. Three of the five persons aboard were killed and the two others were seriously injured.

The Safety Board's investigation of this accident disclosed that the exhaust tailpipe on the right engine was blocked by a burned and broken portion of the tailpipe muffler/diffuser assembly and that the engine was developing low power at impact. A metallurgical examination of the muffler/diffuser assembly revealed that fracture surfaces had been subjected to high heat conditions for an extended period of time. That is, the assembly apparently had been burned and broken prior to the accident but the condition was not detected. Further deterioration of the assembly finally resulted in catastrophic blockage of the exhaust system.

During the period 1978 to 1982 inclusive, 11 service difficulty reports were filed with the Federal Aviation Administration's (FAA) Maintenance Analysis Center regarding blockage of Piper Model PA-34-200 exhaust systems. These reports included remarks such as: "inner baffle failed and restricted exhaust, causing a loss of power;" "inner baffle in tailpipe broke, blocking outlet, causing power loss-heat buildup failed No. 3 piston;" "takeoff aborted, engine RPM dropped to 1700, found heater baffle broke loose inside muffler."

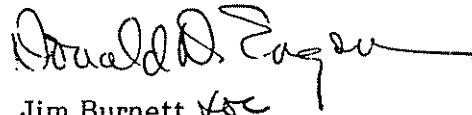
To prevent a recurrence of a similar accident, the Safety Board believes that those Piper Seneca PA-34-200 airplanes which incorporate tailpipe muffler/diffuser assemblies (many 1972, 1973, and 1974 models) should be inspected immediately for evidence of deterioration of these assemblies. Additionally, the FAA should determine whether accelerated inspection intervals, muffler life limits, or related design improvements of the muffler/diffuser assembly are warranted.

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

Issue an Emergency Airworthiness Directive requiring an immediate inspection of the tailpipe muffler/diffuser assemblies which are incorporated on certain models of Piper Seneca PA-34-200 airplanes for evidence of deterioration. If warping, buckling, burning, or cracks exist, the affected assembly should be replaced. (Class I, Urgent Action) (A-83-31)

Conduct an engineering evaluation of the Piper Seneca Model PA-34-200 tailpipe muffler/diffuser assembly to determine whether accelerated inspection intervals, muffler life limits, or related design improvements are warranted. (Class II, Priority Action) (A-83-32)

BURNETT, Chairman, and McADAMS and ENGEN, Members, concurred in these recommendations. GOLDMAN, Vice Chairman, and BURSLEY, Member, did not participate.



By: Jim Burnett *for*  
Chairman