



SAIB: CE-10-33R1

Date: August 16, 2010

SUBJ: Engine Exhaust

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) communicates an airworthiness concern to all owners and operators of reciprocating engine-powered airplanes that use an exhaust system heat exchanger for cabin heat. This revision clarifies the airworthiness concern is for aircraft that use an exhaust system heat exchanger for cabin heat.

At this time, this airworthiness concern is not considered an unsafe condition that would warrant an airworthiness directive action under Title 14 of the Code of Federal Regulations (14 CFR), part 39.

Background

The Federal Aviation Administration tasked Wichita State University to conduct research that focuses on carbon monoxide safety issues as they apply to general aviation products. A technical report titled "Detection and prevention of carbon monoxide exposure in General Aviation Aircraft, Document No. DOT/FAA/AR-09/49, dated October 2009" is available from the National Technical Information Services using the contact information noted below and is also available electronically at <http://www.tc.faa.gov/its/worldpac/techrpt/ar0949.pdf>.

The report shows that after researching National Transportation Safety Board (NTSB) accidents related to carbon monoxide (CO) poisoning, the muffler system was the top source of CO. For the CO-related cases where the muffler was identified as the source of the CO leakage, 92 percent had a muffler with more than 1,000 hours of service.

When developing this SAIB, the FAA considered the NTSB investigation of an accident on December 17, 2000, where a Beech Model BE-23 aircraft impacted terrain killing the commercial-rated pilot, the sole occupant of the airplane. The NTSB determined the probable cause of the accident was in part "the pilot's incapacitation due to carbon monoxide (CO) and a fractured muffler."

Recommendation

The FAA recommends that you do the following:

1. Replace the mufflers on reciprocating engine-powered airplanes that use an exhaust system heat exchanger for cabin heat with more than 1,000 hours on the muffler and at each 1,000-hour interval, unless the manufacturer recommends or FAA regulations require a more frequent replacement.
2. Review and continue to follow the guidance for exhaust system inspections and maintenance in SAIB CE-04-22, dated December 17, 2003, and Advisory Circular 43-16A, Aviation Maintenance Alert (AMA), issued October 2006, All Powered Models, Carbon Monoxide Poisoning Potential.

3. Use CO detectors while operating your aircraft as recommended by SAIB CE-10-19R1, dated March 17, 2010.
4. Continue to inspect the complete engine exhaust system during 100-hour/annual inspections and at inspection intervals recommended by the aircraft and engine manufacturers following their applicable maintenance manual instructions.

For Further Information Contact

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For Related Information on the Technical Report, Contact:

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