



U.S. Department
of Transportation

Federal Aviation
Administration

Airworthiness Concern Sheet

Date: November 22, 2016

Reply to:

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Make: All turbocharged reciprocating engine powered aircraft

Model / Series:

Serial Numbers:

Reason for Airworthiness Concern: Failure of the Turbocharged Exhaust Tailpipe V-Band Coupling

Federal Aviation Administration (FAA) Description of Airworthiness Concern

V-Band coupling failures on turbocharged reciprocating engines at the turbocharger exhaust tailpipe interface continue to result in incidents and accidents. Separation of the turbo/tailpipe interface can potentially lead to engine bay in-flight fires, smoke/fumes in the cockpit, and engine power loss. These events are not unique to any specific brand of aircraft, engine, or coupling manufacturer. This problem affects both rotary and fixed wing aircraft.

The FAA has dealt with these events by issuing numerous (18) aircraft model specific Airworthiness Directives, providing guidance and recommendations in at least seven Special Airworthiness Information Bulletins, issued approximately six AC43-16A Maintenance Alert articles, and updated existing Advisory Circular guidance. Industry too has taken action to raise awareness of the concerns associated with V-Band coupling failures by publishing articles in various trade magazines and user group newsletters, issuing installation guidance and clarifying installation requirements for v-band couplings.

In spite of previous corrective action attempts problems continue to persist. The most recent fatal accident occurred in May 2016 resulting in four fatalities. The FAA and Industry have established a working group to examine this continued safety issue. The working group is looking at this airworthiness concern from a comprehensive perspective to develop safety enhancing corrective actions. We seek your assistance in obtaining in-service data to help drive corrective action decisions.

Request for Information (For example: Proposed alternate inspection or repair procedures, cost impact, etc. Your comments or replies to the AA need to be as specific as possible. Please provide specific examples to illustrate your comments or concerns.)

The public is asked to provide the following information concerning your experience with these turbocharger/tailpipe V-band couplings:

- V-Band Coupling Inspection Frequency
- Type of inspection conducted (e.g., Preflight tailpipe looseness check, general visual inspection without coupling removal)
- Inspection criteria utilized (e.g., Airplane Maintenance Manual, etc.)
- Typical replacement criteria (e.g., excessive corrosion, cracks, outer band cupping, etc.) encountered to cause V-band coupling replacement
- Observations on related components (Turbo Flange, Exhaust pipe flanges, etc.)
- Observations of the condition of couplings at replacement (include photographs if available)
- Coupling inspection/replacement difficulty (e.g., was it difficult to gain access or difficulty)
- Total coupling time-in service at time of inspection
- Total coupling time in-service prior to replacement
- V-band clamp part number and design features (e.g. riveted vs. spot weld construction, single piece vs. multi-segment, opening limiter cable, etc.)
- Airplane Make, Model, and Serial Number
- Airplane total time-in-service
- Airplane operating environment (e.g., coastal or humid environment, etc.)
- Corrective Action Recommendations (e.g., improved processes and guidance, inspection/replacement criteria, design changes, etc.)

- If available, please send any removed turbocharger to exhaust pipe couplings to: Mr. Jeff Janusz, Wichita Aircraft Certification Office; 1801 Airport Road, Room 100; Wichita, KS 67209

This Airworthiness Concern Sheet (ACS) is intended as a means for FAA Aviation Safety Engineers to coordinate airworthiness concerns with aircraft owners/operators through associations and type clubs. At this time, the FAA has not made a determination on what type of corrective action (if any) should be taken. The resolution of this airworthiness concern could involve Airworthiness Directive (AD) action or a Special Airworthiness Information Bulletin (SAIB), or the FAA could determine that no action is needed at this time. The FAA's final determination will depend in part on the information received in response to this ACS.

The FAA endorses dissemination of this technical information to all manufacturers and requests association and type club comments.

Attachments:	Transmittal:	Response Requested By:
<input type="checkbox"/> Service Difficulty Report <input type="checkbox"/> Accident/Incident Data System <input type="checkbox"/> Service Letter / Bulletin <input type="checkbox"/> Special Airworthiness Information Bulletin <input type="checkbox"/> Federal Aviation Administration or National Transportation Safety Board Safety Recommendation <input type="checkbox"/> Airworthiness Directive <input type="checkbox"/> Alternate Means of Compliance <input type="checkbox"/> Risk Analysis	<input type="checkbox"/> Federal Aviation Administration <input checked="" type="checkbox"/> Airplane Owners and Pilots Association <input type="checkbox"/> Experimental Aircraft Association <input checked="" type="checkbox"/> Type Club <input checked="" type="checkbox"/> Type Certificate Holder <input checked="" type="checkbox"/> Other:	<input type="checkbox"/> Emergency (10 days) <input type="checkbox"/> Alert (30 days) <input checked="" type="checkbox"/> Information (90 days)