



U.S. Department of Transportation

Federal Aviation Administration

# Airworthiness Concern Sheet

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<p><b>Reply to:</b>  Name: Boyce Jones  Title: ASE – Aerospace Engineer  Office: Atlanta ACO  Department: Propulsion, AIR-7A2  Street Address: 1701 Columbia Ave  City, State, ZIP: Atlanta, GA, 30337  Telephone: (404) 474-5535  Email: Boyce.jones@faa.gov</p>	<p><b>Make:</b>  Continental Aerospace Technologies, Inc.</p> <p><b>Models / Serial Numbers Affected:</b>  GTSIO-520-C, D, H, K, L, M, N; IO-550-G, N, P, R; IOF-550-N, P, R; TSIO-520-BE; TSIO-550-A, B, C, E, G, K, N and TSIOF-550-D, J, K, P with Cylinder heads produced on or after 01 NOV 2014 with serial numbers before AC18KB277</p> <p><b>Reason for Airworthiness Concern:</b> Possibility of continued fracture of cross-flow cylinder assemblies.</p> <p>The Federal Aviation Administration (FAA) issued Airworthiness Directive (AD) 2020-16-11 in response to reports of in-flight engine failures due to fractured cross-flow cylinder assemblies. AD 2020-16-11 requires cylinder head inspection and removal of the casting material build-up on the radius edge of identified cross-flow cylinder heads to reduce the potential for fracture initiation.</p> <p>AD 2020-26-16 was issued as a terminating action; however, the FAA has received multiple reports from the field of cracked cylinders despite prior compliance with AD 2020-16-11. The FAA is concerned that the corrective action contained within AD 2020-16-11 is not sufficiently resolving the issue, so the FAA needs additional input from the field in order to better understand whether any additional actions are necessary at this time.</p>
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**Federal Aviation Administration (FAA) Description of Airworthiness Concern**

The FAA is publishing this Airworthiness Concern Sheet to request information from the flying public regarding their experience complying with AD 2020-16-11 (as well as SB18-08A, MSB18-08B and/or MSB18-08C) and any noteworthy observations since compliance was completed.

**Request for Information**

1.) Do you have (or did you have) a Continental GTSIO-520-C, D, H, K, L, M, N; IO-550-G, N, P, R; IOF-550-N, P, R; TSIO-520-BE; TSIO-550-A, B, C, E, G, K, N and TSIOF-550-D, J, K, P engine with an affected cylinder(s) (whether the cylinder(s) is AD 2020-16-11 compliant or not)? If so, please provide aircraft type, installed engine model and the cylinder serial numbers for each affected cylinder.

Note (from MSB18-08C): Affected cylinder head castings have a distinguishing feature from unaffected. Affected new and rebuilt engines with serial number 1036883 and later were inspected and corrected at the factory to comply with this Service Document. New or rebuilt engines obtained prior to 01 NOV 2014 are not affected by this Service Document. Additionally, cylinder assemblies obtained prior to 01 NOV 2014 or stamped with serial number AC18KB277 or later are not affected by this Service Document. These identification landmarks can positively identify an affected cylinder without reference to part number.

- 2.) When (Total Hours in Service and Date) did you complete the corrective action included in AD 2020-16-11 (inspection and modification) for your affected cylinder(s)? Which version of the Continental Aerospace Technologies, Inc. service bulletin did you utilize to complete compliance (SB18-08A, MSB18-08B or MSB18-08C)? Did you find the compliance instructions to inspect and modify the affected cylinder(s) while installed on the engine to be reasonable? If not, please provide an explanation.
- 3.) After initial compliance of the Mandatory Service Bulletin (SB18-08A, MSB18-08B and/or MSB18-08C), did you experience the need for rework/re-compliance of the MSB due to poor workmanship performed during the initial compliance of the MSB?
- 4.) Since compliance was completed on your affected cylinder(s), have you had any fracture-related issues with any of the post-compliance, modified cylinders? If so, can you describe where the cylinder was cracked and when the crack was discovered (i.e. during oil change, as a result of issue while in operation, etc.)? If known, please also provide the total hours in service and date when the crack was discovered.
- 5.) Do you have any other concerns related to the corrective action included in AD 2020-16-11?

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.

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