

Lycoming Piston Engines

**AD/LYC/101**  
**Amdt 1**

**Superior Cylinders**

**3/97**

Applicability: All Lycoming TIO/LTIO-540-A2C, -J2B, -F2BD, -J2BD, -N2BD, -R2AD, -S1AD and IO-540-M1B5D engines fitted with Superior Air Parts Inc. cylinders part number (P/N) SL54000-A1, SL54000-A2, SL54000-A2P, SL54000-A20P and SL54000-A21P with serial numbers 001 through 650.

- Requirement:
1. To prevent the possible loss of a cylinder head, the subsequent loss of engine power and a possible engine fire, carry out:
    - a. A visual inspection of applicable cylinder assemblies for evidence of combustion leaks and/or cracking in the area adjacent to the location of the inlet valve seat as detailed in Figure 1, and
    - b. An 80psi pressure “wet” leak check of the cylinder assemblies paying particular attention to the area detailed in Figure 1.

Remove from service before further flight, any cylinder showing either combustion gas leakage or cracks.

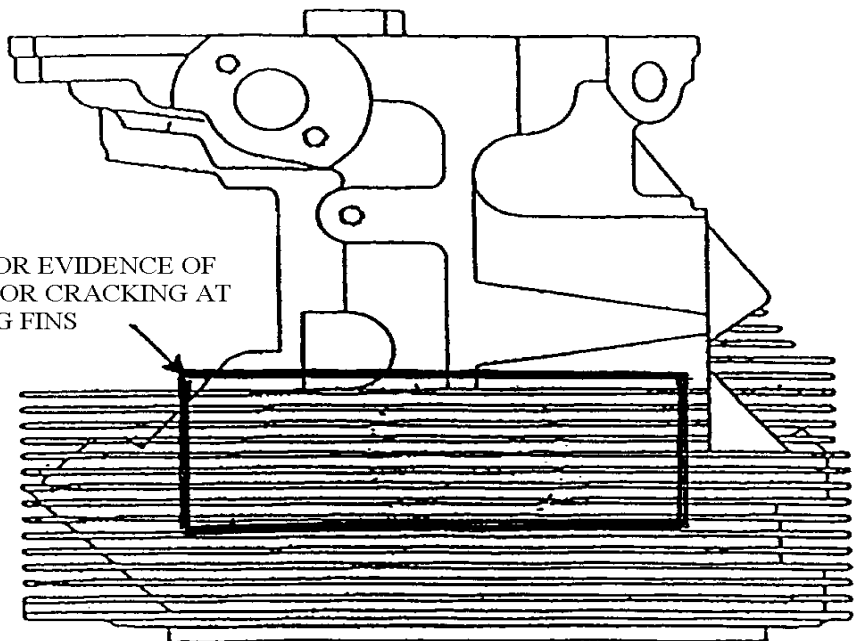
2. Remove applicable cylinders from service.

*Note 1: For the purpose of Requirement 1.(B), a wet leak check may be carried out by using soapy water or a commercial leak detector product such as “Sherlock Leak Detector”.*

*Note 2: FAA Airworthiness Directive 97-01-04 refers.*

FIGURE 1

INSPECT MARKED AREA FOR EVIDENCE OF COMBUSTION LEAKS AND/OR CRACKING AT THE BASE OF THE COOLING FINS



**SCHEDULE OF AIRWORTHINESS DIRECTIVES**

Compliance: 1. Cylinders with a time in service greater than 250 hours; within 5 hours time in service from the effective date of this directive and thereafter at intervals not to exceed 25 hours time in service.

Cylinders with a time in service less than 250 hours; prior to exceeding 250 hours time in service and thereafter at intervals not to exceed 25 hours time in service.

2. Prior to exceeding 300 hours cylinder time in service.

This Amendment becomes effective on 27 February 1997.

Background: This directive was originally issued to require the inspection of certain cylinder assemblies. The requirement follows the CASA investigation of a PA31-350 cylinder head failure in service. This amendment reflects the issue of an FAA airworthiness directive based on the results on the CASA investigation and the subsequent revision to the cylinder manufacturer's published requirements.

FAA Airworthiness Directive 97-01-04 increases the engine models applicable, reduces the compliance threshold and adds a terminating action by replacement of affected cylinders.

The original issue of this Airworthiness Directive became effective on 27 November 1996.