

AlliedSignal (Lycoming) Turbine Engines - ALF502 and LF507 Series

AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/ALF/14 Amdt 2 and issues the following AD under subregulation 39.1 (1) of CAR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

**AD/ALF/14
Amdt 3**

Engine Oil System Health Monitoring

8/2001

Applicability: AlliedSignal ALF 502L, ALF502R, and LF507 series engines installed in Canadair CL-600, BAe 146, and Avro RJ series aircraft.

Requirement: 1. Carry out oil system health monitoring in accordance with AlliedSignal Service Bulletins (SB) LF 507-1H 79-5, LF507-1F 79-5, ALF502L 79-0171, and ALF502R 79-9 for LF507-1H, -1F, ALF502L and ALF502R series engines as appropriate.

Where the service bulletins require:

- (a) magnetic chip detector (MCD) debris be left to accumulate on the detector for assessment of a debris accumulation rating, it is permissible to remove the MCD debris for material analysis provided a record of debris accumulation is kept for subsequent assessment per the service bulletin requirements,
- (b) a scavenge oil temperature check be carried out, it is permissible to use the procedures specified in the respective aircraft maintenance manuals in lieu of those specified in the service bulletins.

Incorporation of an improved No.4 bearing configuration as per Honeywell (formerly AlliedSignal) SB ALF/LF 72-1030, Revision 3, dated 3 April 2001 or SB ALF/LF 72-1040, Revision 2, dated 3 April 2001 (as applicable) is a terminating action for Requirement 1 of this Directive (Refer AD/ALF/17). Upon incorporation of the improved bearing configuration, on-going oil system monitoring reverts to the respective aircraft manufacturer's maintenance requirements.

- 2. For ALF502R series engines equipped with oil filter by-pass valve, P/No 2-303-432-01, replace or modify the oil filter by-pass valve in accordance with Avco Lycoming Textron Service Bulletin ALF502R-79-0162, Revision 2.

Note 1: CAA (UK) AD 002-09-96 and FAA AD 2000-05-14 refer.

Note 2: Incorporation of earlier versions of SB ALF/LF 72-1030 or SB ALF/LF 72-1040 (as applicable) is also terminating action for Requirement 1 of this Directive.

SCHEDULE OF AIRWORTHINESS DIRECTIVES

- Compliance:
1. Unless previously accomplished, initiate the oil health-monitoring program within 100 hours time in service from 26 March 1998.
 2. Unless previously accomplished, no later than 30 April 1998.

This Amendment becomes effective on 9 August 2001.

Background: A number of 4/5 bearing failures has resulted in separation of the LP turbine shaft. One failure of the LPT shaft led to an overspeed condition that resulted in an uncontained engine failure and subsequent aircraft damage.

This amendment is issued to include the latest revisions of SBs ALF/LF 72-1030 and ALF/LF 72-1040, and reference the current FAA AD.

Amendment 2 became effective on 7 September 2000 and included an additional SB reference to expand terminating action requirements.

Amendment 1 became effective on 26 March 1998 and was issued to expand the applicability to include an additional engine model, to reference an FAA AD, to mandate the requirement to use oil filter by-pass valves previously mandated by AD/ALF/7, and to provide terminating action.



Eugene Paul Holzapfel
Delegate of the Civil Aviation Safety Authority

29 June 2001